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ABSTRACT

The primary intentions of this report are to describe urbanization in Thailand to the extent that available information permits, to relate it to development and development planning, and to identify gaps in current knowledge that are likely to become significant in the formulation of future policies and programs. The first section, "Urbanization and the Nation," discusses "The Dominance of Bangkok," "Population Growth and Movement," "Settlement Patterns," "Regional Economics," "Employment," and a discussion of the various geographic regions of Thailand. The second section discusses, "The Governance of Bangkok;" "Metropolitan Land Use and Development; Traffic and Public Transportation; Aesthetics, Recreation and Space; Crime and Violence; Housing; Air and Water Quality; Education; Unemployment; Public Finance; Trends; The Town and Country; Planning Act 251; and the Revised Metropolitan Development Plan. The third section presents a synthesis. At the end of this report is a postscript and bibliography. [For related documents in this series, see UD 013 731-UD 013 743 for surveys of specific countries. For special studies analyzing urbanization in the Third World, see UD 013 745-UD 013 748.] (Author/SB)

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An International
Urbanization Survey Report
to the Ford Foundation

Urbanization in Thailand

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This working paper was prepared as supportive material for an International Survey of Urbanization in the developing countries, which was organized by the Ford Foundation late in 1970 and was completed late in 1972. The purpose of the Survey was to provide findings and recommendations to guide the Foundation in making informed judgments on its future participation in programs related to the urban condition in the less-developed countries.

The Survey was directed neither to perform nor to commission original research. Its work was to be reportorial, analytic, and indicative of program choices. To serve these objectives, the Survey was essentially a field operation in which the staff travelled widely in the countries where the Foundation maintains field offices and drew not only upon its own observations but upon the experience of Foundation personnel assigned to the developing countries. The staff's own field notes on phases of urbanization in specific countries were expanded into working papers both to record observations and to clarify the deductive processes and the analyses of data which were to form a demonstrable basis for the Survey's conclusions. Additional working papers were provided by Foundation personnel with a depth of field knowledge, and by consultants expert either in specific countries or in topics of special interest.

The Survey working papers and special studies were originally intended only for internal use. It became evident, however, that the body of material had values which argued for wider exposure. Accordingly, the Foundation is publishing the papers for those with special country or topical interests and for those interested in the material as a whole.

The working papers carry disclaimers appropriate to the circumstances of their preparation and to the limitations of their original purpose. The reader should not expect to find in them either the product of original research or a comprehensive treatment of the processes of urbanization in the particular country. Rather, they are occasional papers whose unity derives from their use as exemplary and illustrative material for the Survey.

But unity of form and substance is not the measure of their value. Each report and special study is an essay on some aspect of urbanization in the developing countries. In most instances, they are what a good essay should be — unmistakably personalized and therefore reflective of the insights and the convictions of informed authors.

The International Urbanization Survey

John P. Robin, Director
Colin Rosser
Frederick C. Terzo

ED 079467

Urbanization in Thailand

by

Jeff Romm

International Urbanization Survey

The Ford Foundation

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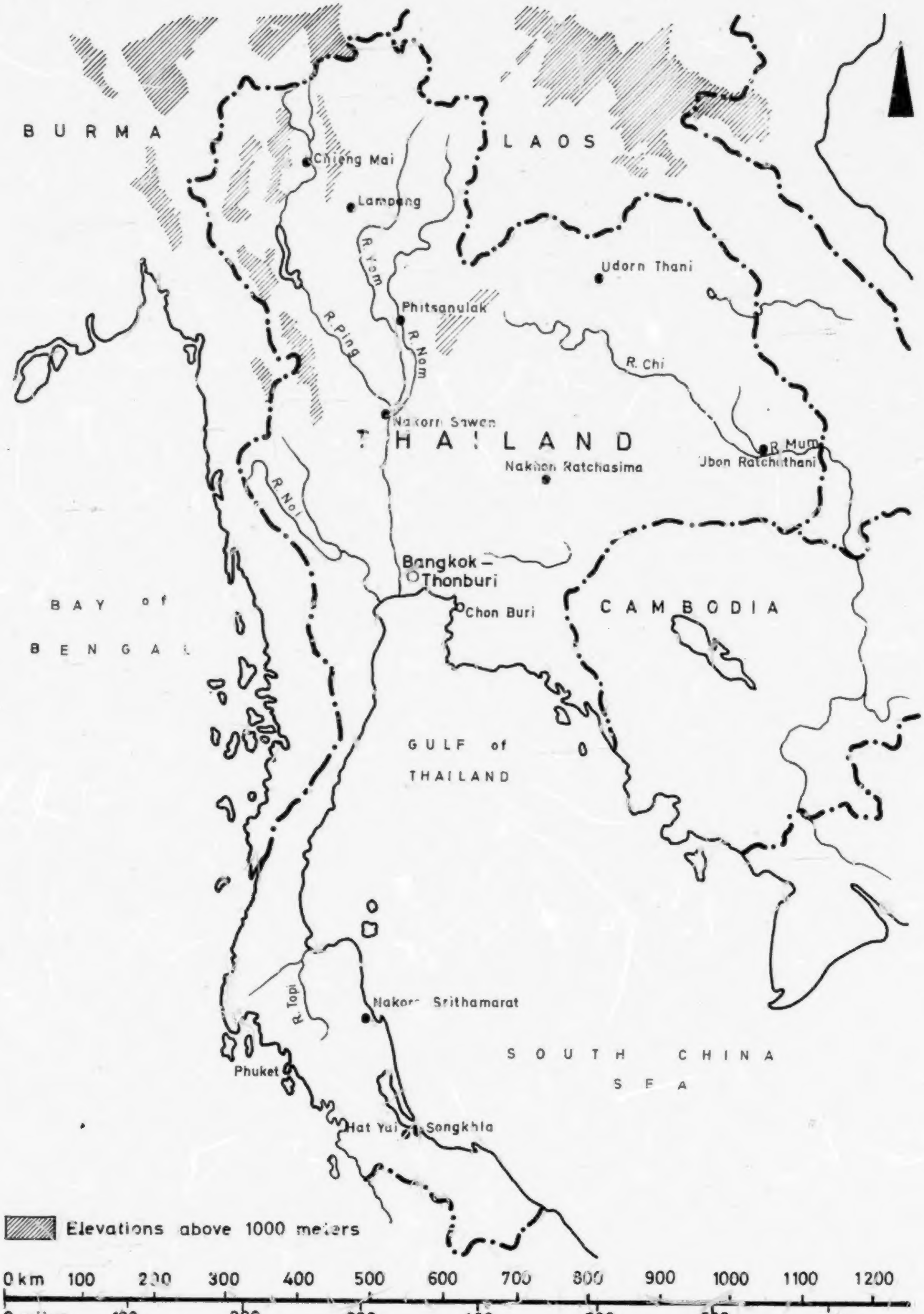
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R. Mum
Ubon Ratchathani
Nakhon Ratchasima
R. Noi
Bangkok – Thonburi
BAY of BENGAL
Chon Buri
CAMBODIA
GULF of THAILAND
R. Tapi
Nakorn Srithamarat
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▨ Elevations above 1000 meters
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URBANIZATION IN THAILAND

INTERNATIONAL URBANIZATION SURVEY

ACKNOWLEDGEMENTS

Preparation of this report required accumulation of large amounts of information. Dr. Phaichitr Uathavikul, National Institute of Development Administration, and Mr. Chaiya Pulsiriwongse, Department of Town and Country Planning, were invaluable as general consultants and as guides in the data collection process. The research assistance of Prateep Kingkaew was also an essential part of the project. Isra Chitradhara and Tanong Utaraskul helped to compile data. Numerous people in governmental and academic organizations contributed generously of their time and ideas. Responsibility for computations, analyses, interpretations, and factual errors is mine.

J. R.

URBANIZATION AND THE NATION

Thailand has a population of approximately 35 million people, 80 per cent of whom live in rural areas and are employed in agricultural pursuits. The country extends from the sub-tropical mountain-valley complex of its North and the broad dry plateau of the Mekong Basin in its Northeast to the southern rainforests on the Isthmus of Kra. It is a diverse nation, ethnically and physically, and has sustained its independence and strengthened its unity during the past century primarily through the vigorous forces of cohesion that emanate from Bangkok. Bangkok is the hub of Thailand, and although not contiguous with three of the country's four geographical regions, is the dominant urban center for all of them.

The division of Thailand into four regions has ethnic, historical, physiographical and economic bases. The Central Region, in which Bangkok is located, is the fertile floodplain of the Chao Phrya River, a rich rice-producing area that has been the traditional home of the Siamese. It now supports, and is being strongly affected by, the rapid growth of an urban-industrial sub-region radiating from Bangkok. Bangkok became its capital after the destruction of Ayuthaya, about seventy kilometers north, by the Burmese during the 18th century. Its site was selected for defensibility; its structure developed around the throne and the temple. Today it has grown into a vast, bustling metropolis of 3.5 million people and is rapidly extending into the surrounding plain.

The Northern Region is a compound of mountains and valleys that comprise the headwaters of the Chao Phrya. It has a potential wealth of agricultural, mineral, forest and water resources. Although only 15 per cent of its area is cultivated, abundant water and conducive climate are stimulating relatively high levels of agricultural productivity and diversity. Three-quarters of its surface is forest land capable, under proper management, of producing valuable yields of teak, pine, meranti and other woods. In the past the region existed as independent kingdoms, as semi-autonomous provinces, and as a part of Burma and Laos; its ethnic composition and culture reflect the vagaries of political transition as well as the migrations of tribal groups from Burma, Laos, and China. Only in the past fifty years has the North become an unconditional part of Thailand, although its relations with the Siamese have always been important.

The Northeastern Region contains about one-third of Thailand's population and area. It is poor, generating less than one-fifth of the nation's Gross Domestic Product (hereafter referred to as GDP). Ninety per cent of its population is rural and primarily dependent on subsistence farming for a livelihood, yet the region has relatively limited agricultural development possibilities because of its dryness. The Mekong development program should, when completed, provide irrigation water for about 10 per cent of the land currently under cultivation, and should substantially affect regional agricultural and industrial possibilities. The people of the Northeast are predominantly Lao and have been, as in the North, largely independent of direct Bangkok control until this century. The region was physically isolated from the Central Plain until the transportation development programs of the last several decades.

The South possesses only 12 per cent of Thailand's population and 13 per cent of its area. It has thrived on tin mining, rubber, and rice production in the past, but is now beginning to suffer from dependence on these commodities as their markets become more competitive and prices decline. The region's population is heavily Muslim, and separatist trends are disturbing the Thai government. Historically, it is a remnant of a Siamese sphere of influence that extended deep into the Malay Peninsula; it has enjoyed levels of autonomy similar to those described for the North and Northeast.

TABLE I

Profiles of Regional Land Use, 1965

Land Use	North	North-east	Central	South	Whole Kingdom
	(Percentage Distributions)				
Forest Land	72.2	38.6	46.2	53.0	53.2
Swamp Land	0.3	0.4	0.1	1.4	0.4
Farm Land	15.1	25.0	34.3	31.7	24.5
Paddy Land	53.9	57.2	60.5	23.3	51.3
Land in Tree Crops	3.6	2.1	8.2	53.8	13.3
Woodland	5.9	13.1	4.7	9.2	8.6
Land in Upland Crops	27.4	16.3	18.9	5.2	17.3
Others[a]	9.2	11.3	7.7	8.5	9.4
Others[b]	12.4	36.0	19.4	13.9	21.9

a. Farm lands not under cultivation.

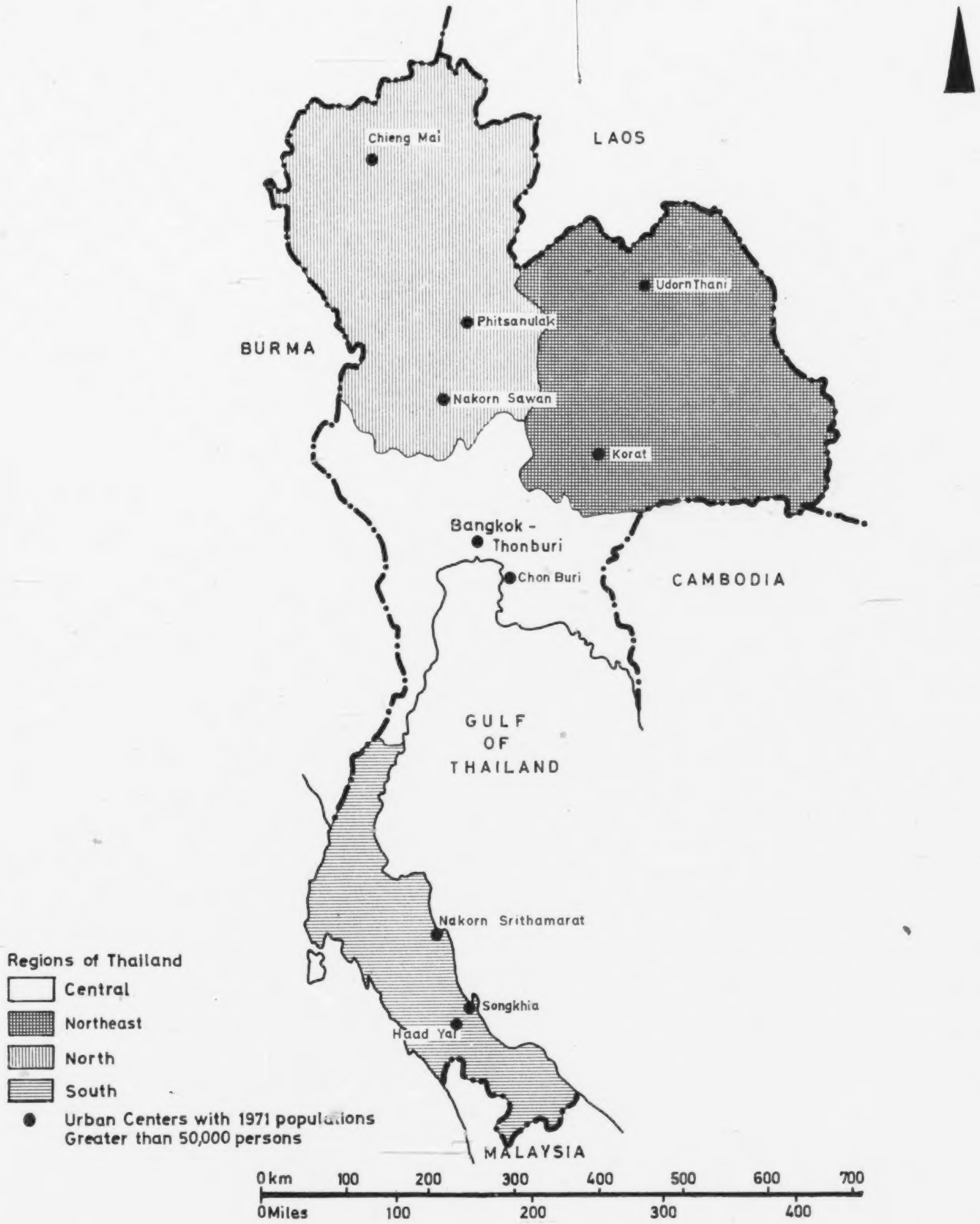
b. Includes urban areas, rivers, highways, etc.

Source: Uathavikul, P., Regional Development and Planning in Thailand, National Institute of Development Administration, No. 125, July, 1970.

The historical perspective is important for an understanding of Bangkok's relations with its regional hinterlands. Until the reign of King Chulalongkorn in the late 19th century, provinces in the North, Northeast, and South were tributaries to, rather than components of,

REGIONS OF THAILAND

FIG. 1


LAOS
Chieng Mai
Udorn Thani
Phitsanulak
BURMA
Nakorn Sawan
Korat
Bangkok - Thonburi
Chon Buri
CAMBODIA
GULF OF THAILAND
Nakorn Srithamarat
Songkhia
Haad Yai
MALAYSIA
Regions of Thailand
Central
Northeast
North
South
Urban Centers with 1971 populations Greater than 50,000 persons
0 km 100 200 300 400 500 600 700
0 Miles 100 200 300 400

the Siamese nation of the Central Plain. Under Chulalongkorn, the apparatus for provincial administration was radically reformed and provinces in the outlying regions were brought under the direct control of the Bankok government. Simultaneously, Chulalongkorn succeeded in drawing influential and distinct religious systems of the North and Northeast into the Bangkok-centered Buddhist hierarchy.[1] The strengthening of administrative and religious links was eventually followed by programs to improve physical accessibility and economic ties. Recent programs have been stimulated, to a great extent, by fears of insurgency and separatist movements. Since World War II economic interdependence has increased rapidly as transport, communications, and administrative and commercial services have been extended into the Bangkok hinterland.

The long process of strengthening the internal cohesion of Thailand has reached a stage that poses new and difficult questions. Having linked the regions to Bangkok, the government must now find means by which to develop them; notable differences in levels of welfare between Bangkok and the regions are significant sources of political instability and disunity. Centrifugal forces in the country, however, make the government unwilling to decentralize control as may be necessary for effective

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1. Notes are collected at the end of the report.

regional development activities. Meanwhile Bangkok, now highly accessible to the regions, finds itself in the throes of rapid urbanization fed by its own vitality and by the relative lack of opportunity in the hinterland; the government must either begin to limit traditional Thai freedoms of economic action for the sake of community welfare or accept the unrestrained consequences of urban growth.

The evolution of government responses to urbanization in Thailand is slow but encouraging; it seems likely that new ideas and information will be put to use over the next five or ten years. Urbanization is usually discussed in terms of the problems it brings to large cities (e.g., congestion and crime, pollution and cultural deterioration) or the stimuli large cities emit to the hinterland. It should more often be seen as a developmental process in which the rural peasant and the urban innovator are equal participants, a process of raising national productivity and welfare across a continuum of environmental conditions through a spatial analogy of the "division of labor."

The primary intentions of this report are to describe urbanization in Thailand to the extent that available information permits, to relate it to development and development planning, and to identify gaps in current knowledge that are likely to become significant in the formulation of future policies and programs.

The Dominance of Bangkok

Metropolitan Bangkok is one of the most dominant primate cities in the world. Its dominance increases as national development proceeds. Ten per cent of Thailand's people live there. Its population is about thirty-five times the size of the next largest city in the nation (Chiengmai in the North or Songkhla-Haadyai in the South). It contains 56 per cent of the nation's urban residents and 37 per cent of its non-rural population, 77 per cent of the nation's telephones and about half its motor vehicles, consumes 82 per cent of its electricity, generates 82 per cent of its business taxes and 73 per cent of its personal income taxes, holds 72 per cent of all commercial bank deposits, and absorbs 65 per cent of the annual investment in construction; all of these shares have either remained steady over the last decade or have risen.[2]

Seventy-two per cent of Thailand's urban population live in the Metropolitan area and the surrounding Central Region. The region generates 80 per cent of the annual value of Thai manufacturers, 68 per cent of transport and communications, 51 per cent of the value of wholesale and retail trade, 63 per cent of services and an astounding 90 per cent of the contribution of financial activities to GDP; all shares but that of national wholesale and retail trade are increasing.[3]

About 28 per cent of the nation's students in primary schools, 58 per cent of its secondary school students, and almost all students in higher education, are enrolled in Central Region institutions. Active students comprise over 20 per cent of the total Metropolitan population. Of the primary school graduates in the South, Northeast, and North who wish to continue their studies at the secondary level, about 35 per cent migrate to the Central Region; only 7 per cent remain in their original domiciles, most move to larger provincial and regional centers.[4] Differentials in the quality of educational opportunities appear to be significant causes of migration toward larger urban centers. It is notable that the student body of Chiengmai University, the one large center for higher education outside of Bangkok, is composed primarily of Bangkok youths who are likely to return to their homes upon completion of their academic programs.

Bangkok is the rail center and port for Thailand. It is the heart of all financial, commercial, educational, industrial, and administrative activity. It is the symbolic focus of the Monarchy, the Church, and the government. Despite the large scale of development expenditures in the hinterland during the past decade, the relative dominance of Bangkok increased and may continue to do so.

Population Growth and Movement

The development of Metropolitan Bangkok is one manifestation of population growth and movement in Thailand. Others are apparent from population data that begin to describe changing patterns of settlement. Table II summarizes several rates of change that suggest trends in the Kingdom and in individual regions.

The population of the Kingdom is growing at an estimated 3.1 per cent per annum. Rural growth is only 2.4 per cent; the combined growth in urban and semi-urban areas is about 7.5 per cent.* The rural share of total population has declined by 6.9 per cent over the last decade. Almost 18 per cent of total population growth in the decade has been absorbed by urban areas, 27 percent by semi-urban areas, and only 55 per cent by rural areas. The semi-urban share of growth is over five times its share of the 1960 population. That of urban and semi-urban populations combined is about two

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*"Urban areas" are defined as settlements that bear the governmental designation of Municipality; "Semi-urban areas" are zones of settlement that have been organized into Sanitary Districts. The spatial boundaries of both kinds of units are easily changed. They indicate the areal distribution of various intensities of public "urban" services. Their extension during the past decade reflects governmental responses to increasing population densities and expectations. Urban and semi-urban population growth, therefore, reflects governmental decisions as well as migratory movements and natural increases within particular areas.

TABLE II

Population Growth and Movement
(Average Annual Rates 1960-69)

	Whole Kingdom	Metropolis	Northeast	Central ex.Metro.	South	North
Total Population Growth	3.1%	6.2	3.3	2.8	3.0	2.0
Natural Rate of Increase *	3.1%	2.9	3.2	2.9	3.3	3.1
Inter-regional Migration	--	+3.3	+0.1	-0.1	-0.3	-0.2
Urban Growth	4.5%	5.2	5.2	3.0	4.5	2.6
Semi-urban Growth	14.0%	66.0	15.3	9.1	10.9	13.3
Urban and Semi-urban Growth	7.5%	6.6	8.3	8.2	6.7	8.0
Rural Growth	2.4%	-4.4	3.1	1.5	2.7	2.4
Changes in Shares of Total Population, %1969/%1960						
Urban	14.5%/13.5% = 1.1	83.2/82.3 = 1.0	4.1/ 3.7 = 1.1	9.6/ 9.5 = 1.0	11.4/10.6 = 1.1	6.4/ 6.7 = 1.0
Semi-urban	10.3%/ 5.2% = 2.0	10.2/1.8 = 5.7	7.7/ 4.6 = 1.7	15.4/ 7.2 = 2.1	7.3/ 4.4 = 1.7	10.7/5.5 = 1.9
Urban and Semi-urban	24.8%/18.6% = 1.3	93.4/84.1 = 1.1	11.8/ 8.3 = 1.4	25.0/16.7 = 1.5	18.7/15.0 = 1.2	17.1/12.2 = 1.4
Rural	75.2%/81.4% = 0.9	6.6/15.9 = 0.4	88.2/91.7 = 1.0	75.0/83.3 = 0.9	81.3/85.0 = 1.0	82.9/87.8 = 0.9
Shares of Total Population Growth 1960-69						
Urban	17.7%	84.9	5.3	10.3	13.8	5.3
Semi-urban	26.9%	28.5	17.1	47.0	17.3	29.0
Urban and Semi-urban	44.6%	113.4	22.4	57.3	31.1	34.3
Rural	55.4%	-13.4	77.7	42.7	68.9	65.7
Ratio: Share of Growth to Share of 1960 Population						
Urban	1.3	1.0	1.5	1.1	1.3	0.8
Semi-urban	5.2	16.5	3.7	6.5	4.0	5.3
Urban and semi-urban	2.4	1.4	2.7	3.4	2.1	2.8
Rural	0.7	-0.8	0.8	0.5	0.8	0.7

Sources: Figures are computed from annual population series of the Department of Local Administration, Ministry of Interior.

* Natural rates of increase are derived from birth and death rates in The Survey of Population Change, 1964--1965, National Statistics Office, March 1969.

and one half times the 1960 proportion. The rural share of growth is but 70 per cent of its share of the 1960 population.

National figures are less informative than regional and local ones, hiding indications of spatial shifts. The data shows that the population of Metropolitan Bangkok has increased by 6.2 per cent per year during the last decade, and that its growth exceeded the natural rate of increase by 3.3.per cent per year. The urban population increased by 5.2 per cent and the semi-urban by 66 per cent per year, while the rural population declined at an average annual rate of 4.4 per cent. The dominant structural change in the Metropolitan area appears to be rapid suburbanization at the periphery of the urban core. While the urban share of growth has been in proportion to its share of the 1960 population, the semi-urban share is over sixteen times that of the population ten years ago. These data accord with visual impressions of a rapid proliferation of suburban communities on lands that were devoted to agriculture until quite recently.

In 1960, only 3.5 per cent of the Northeast's population was urban and less than 5 per cent semi-urban. During the past decade, its urban population has grown by 5.2 per cent a year; combined urban and semi-urban growth has been at 8.3 per cent highest regional rate in the nation. The rural population has increased more slowly (3.1 per cent per year) than the estimated rates of natural increase (3.2 per cent) and regional population growth (3.3 per cent). The Northeast, although mostly rural, displays urbanizing trends. It differs from the rural North in that urbanization is most apparent in the growth of urban areas; in the North, urbanization increased semi-urban settlements, but brought a proportional decline in urban populations; the Northeast also differs from the other regions (e.g., North, South and Central Plain) outside the Metropolitan area, in its experience of a net inward migration, probably channelled into urban areas. The construction of large U.S. military complexes and government infrastructural development programs may explain this pattern; without them, perhaps the net outward movement of other regions would have occurred. The government has concentrated investments in the city of Khon Kaen. Major military bases have been built near Korat, Ubon and Udorn. These cities have among the highest growth rates in the nation.

The South has the highest rate of net migratory loss, the lowest rate of combined urban and semi-urban growth (6.7 per cent per year), but the largest relative increase of urban share among the regions of Thailand. About 11.5 per cent of its population now live in urban centers, a much larger proportion than occurs in the North or Northeast.

In the North, the rates of both urban and rural growth are lower than the rate of total population growth. Semi-urban settlements, however, are expanding rapidly, absorbing almost one-third of regional population growth. The combined urban and semi-urban share of population has increased, and the rural share has declined, by more than in the South or Northeast. The urban share, however, has dropped, a situation that exists in no other region. The North also displays a net outflow of population.

The Central Plain, which lies just outside the Metropolitan area, has shown a number of somewhat dramatic changes in actual population patterns when one considers the last decade. The rural portion of its population has declined from 84 per cent to 75 per cent. Half of all population growth was absorbed by semi-urban settlements, more than six times the semi-urban share of the 1960 population. Less than 43 per cent of growth occurred in rural areas, only about half of the total rural share ten years ago. Urban and semi-urban population grew at a combined rate of 8.2 per cent, with semi-urban growth predominant. Urban population grew only slightly faster than total population. The data suggests a net outflow of migrants, probably to the Metropolitan area.

The above information sketches profiles of regional population dynamics. It also stimulates some interesting questions. Why is semi-urban growth such a dominant phenomenon in the North and how is it affecting the distribution of people in the region? What forces are responsible for the net outward migrations from the North and South? From what parts of these regions are migrants coming, and where are they going? Although the North and South have about the same combined shares of urban and semi-urban population, the former displays a marked tendency toward semi-urban, the latter toward urban, settlement. What accounts for the difference? Why does the Northeast have a net inflow of migrants, where do immigrants settle, and what do they do for a living? To what extent is the region's rapid rate of urban growth caused by an inflow of migrants, to what extent by movements from rural areas into the cities? How do migratory patterns relate to the relative constraints and productivities of different local and regional environments? How are trends in the North, Northeast and South related to population changes in the Central Plain and the Metropolitan area, to patterns of economic development and new opportunities, and to the impacts of government policies and programs? What do they suggest for future national development policies? Some tentative answers and many additional questions emerge from the following analysis.

Settlement Patterns

Population trends in Thailand suggest a gradual shift toward urban and semi-urban habitation. Presumably, they indicate the existence of differential opportunities for social and economic well-being, and reflect the varying capacities of different settlement patterns to exploit natural and human resources, absorb population increases, and organize social behavior in productive ways. They are responses to environmental constraints, social aspirations, economic exigencies and technological possibilities and, therefore, to developmental changes that affect such factors. What the characteristics and functions of different settlements are, how they influence movements of people and resources, and how responsive they are likely to be to investments and other activities are important for development planning and program implementation.

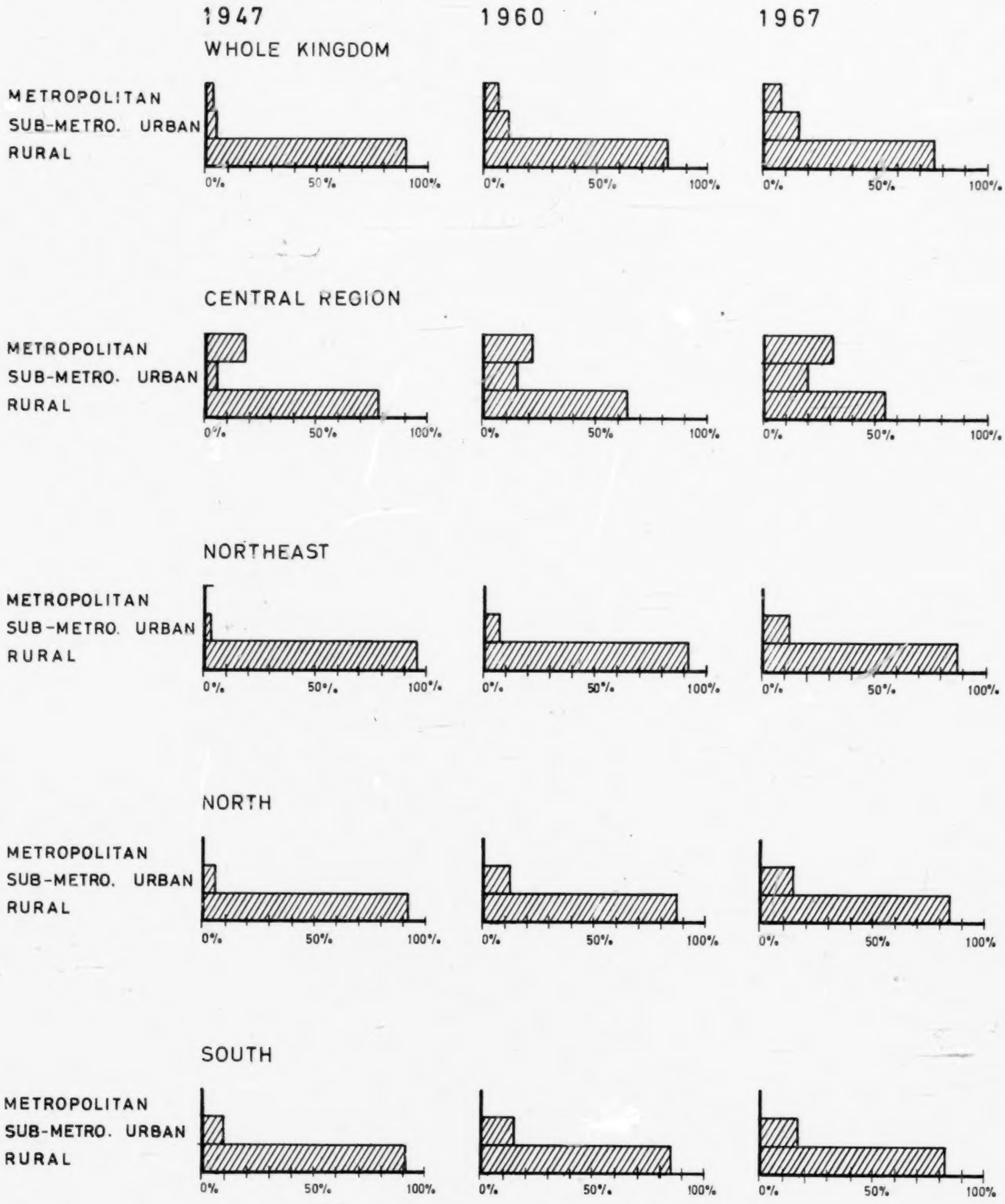
For simplicity, settlement patterns were categorized in the preceding section as "urban," "semi-urban," and "rural." In fact, a hierarchy of interdependent settlement sizes exists, containing hill farmsteads, villages, towns and provincial cities, as well as Metropolitan Bangkok. Each successive tier of the hierarchy displays greater complexity, greater specialization and diversity of function, than those of lower population densities; each is increasingly efficient in the use of natural, human and technical resources. The joint processes of urbanization and development are altering not only the shape, but also the productivity in Thailand's settlement hierarchy. This particular section is concerned with some of the various aspects of change that have occurred during a period which stretches over the last several decades.

Figures 2, 3, 4, and 5 summarize all of the data compiled by ourselves in collaboration with Sidney Goldstein. These figures concern themselves with the changes in the distribution of Thai population.[5]

Figure 2 illustrates proportions of the population residing not only in the metropolitan, but also in the sub-metropolitan urban, and rural areas, by both nation and region, for the years 1947, 1960, and 1967. Figure 3 shows the proportions of the population residing only in sub-metropolitan urban settlements of different sizes. It also deals with both nation and region for the above mentioned-years. Figure 4 shows how the number of municipalities in different size classes have changed between 1947 and 1967. Figure 5 indicates the net changes in number of municipalities and the shares of total

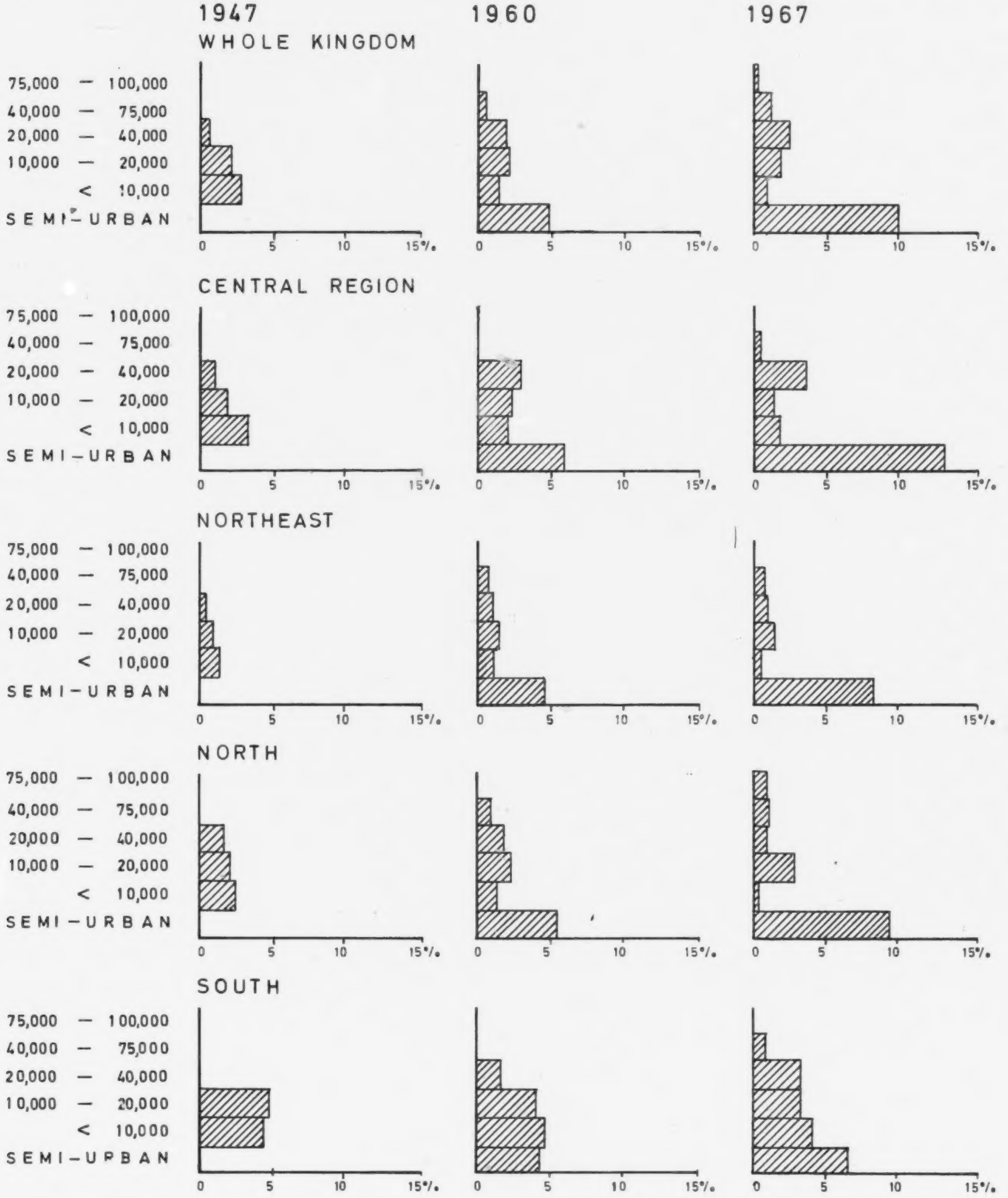
PROPORTION OF POPULATION IN METROPOLITAN, SUB-METROPOLITAN URBAN AND RURAL AREAS

FIG. 2



PROPORTION OF POPULATION IN SUB-METROPOLITAN URBAN SETTLEMENTS OF DIFFERENT SIZES

FIG. 3



MUNICIPALITY POPULATION SIZE CLASSES

FIG. 4

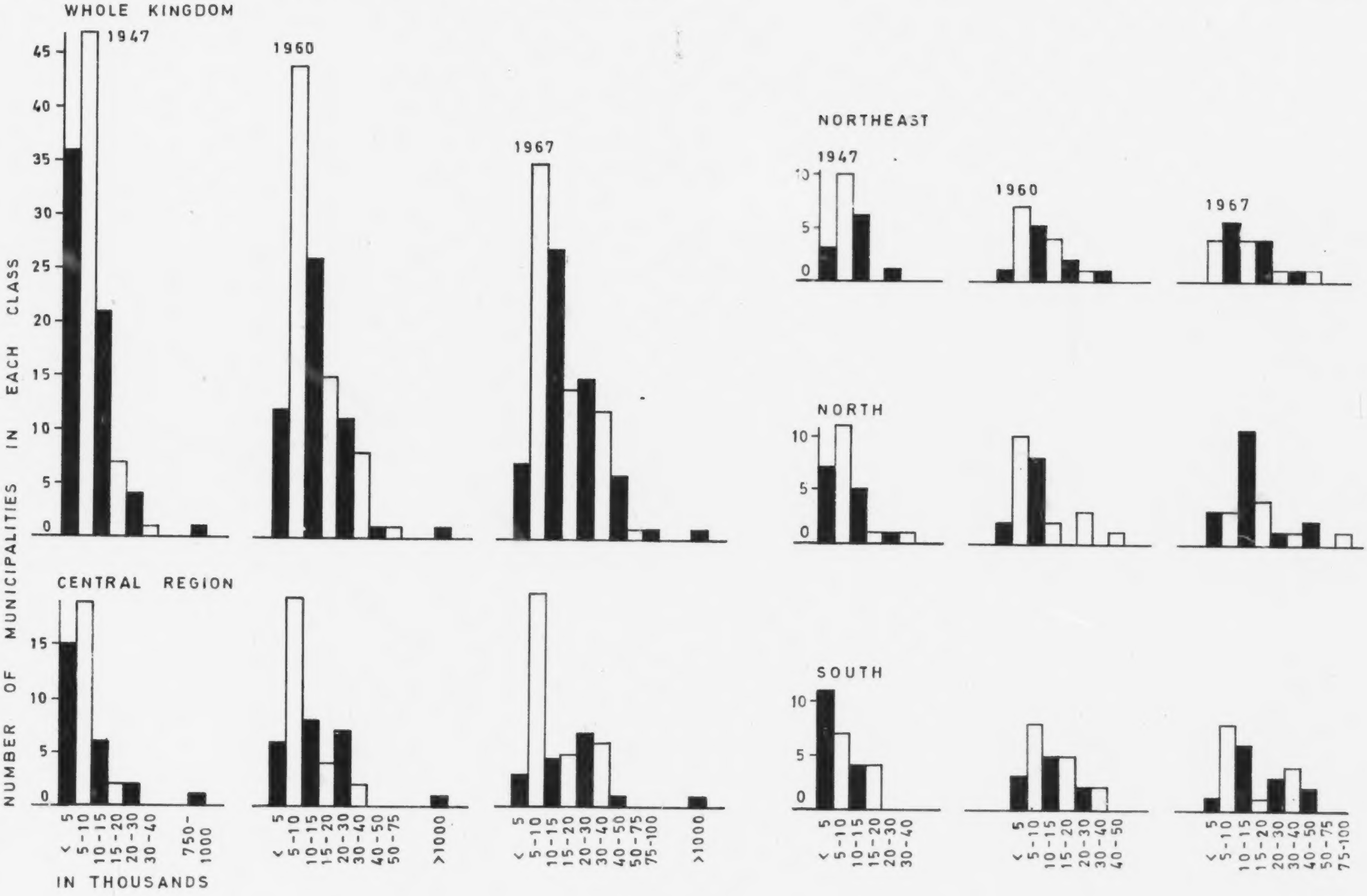
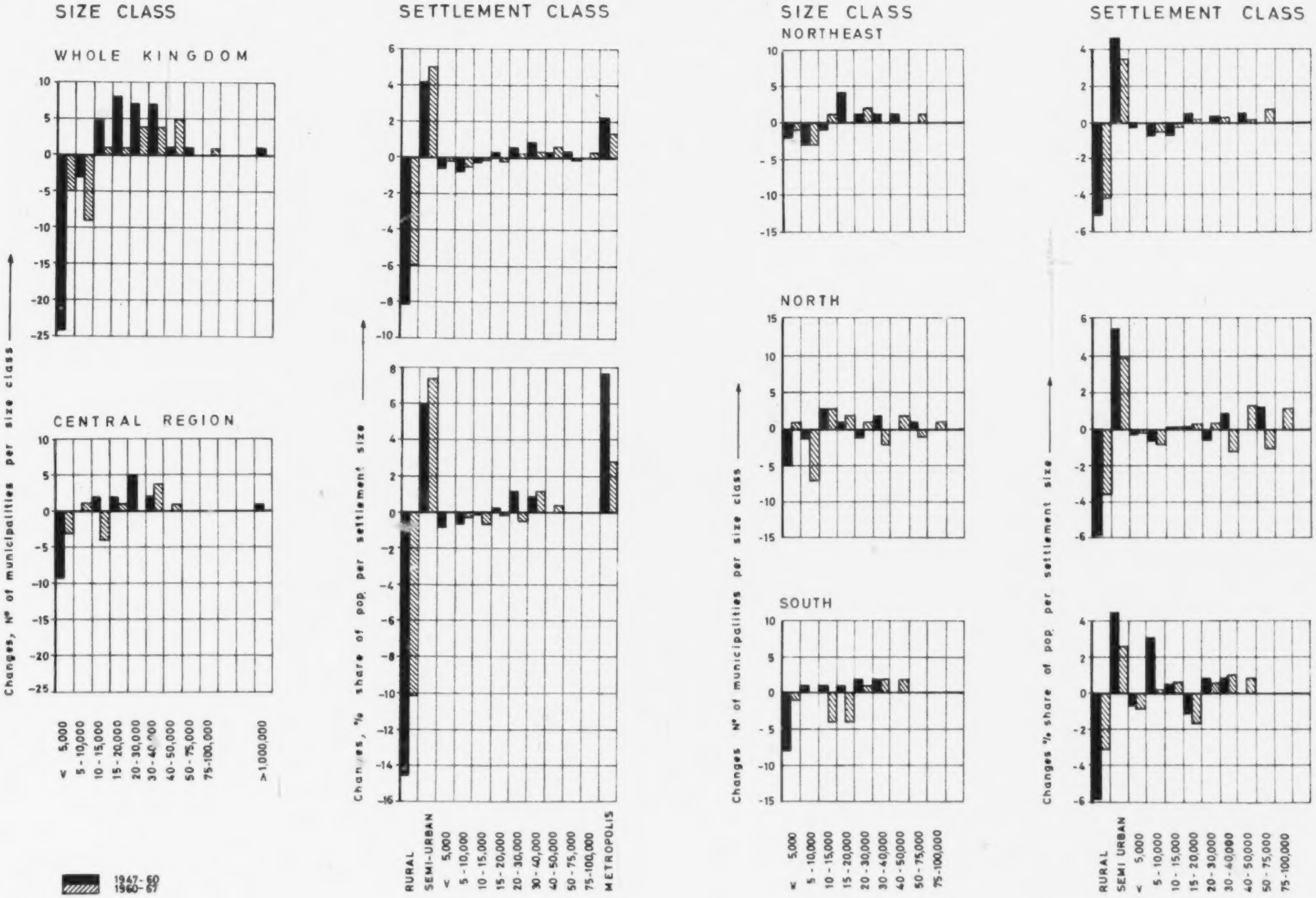


FIG. 5

CHANGES IN THE DISTRIBUTION OF MUNICIPALITY SIZES AND POPULATION 1947 - 1967



INTERNATIONAL URBANIZATION SURVEY ——— URBANIZATION IN THAILAND population residing in settlements of different size classes for the years 1947, 1960, 1967. The overall picture suggested by the diagrams has led us to the following general conclusions about Thailand as a whole.

a) In the face of and despite strong urbanizing trends, Thailand continues to be a predominantly rural nation. Although the rural portion of the population declined by a clear 14 per cent over the 1947-1967 period, it remains, without a doubt, greater than 75 per cent of the total population. Less than half the population in the Central Plain, including the entirety of the Metropolitan area, is now rural; this compares with a rural share of over 75 per cent in the year 1947. However, rural shares in the South, North, and Northeast have a tendency to remain within the 80-90 per cent range.

b) An obviously major feature of Thai population trends, which is more than mildly evident throughout the nation is the growth of semi-urban areas. Rates of semi-urban growth have a tendency to exceed far beyond those of all other settlement classifications in question. Whether this primarily reflects suburban migrations spilling over from urban centers, urban-oriented migrations leaking out of rural areas, local increases in general population densities, or simply governmental responses to increased requests and demands for services is somewhat unclear; in all probability various combinations of the above-mentioned possibilities might hold true for different situations, depending, of course, upon which particular locality was involved. The significance and magnitude of semi-urban development are not, at this point, widely appreciated, however, it seems fairly safe to say that the policy implications seem more than substantial.

c) A hierarchy of urban areas is evolving out of the rural environment. In the year 1947, only one-fourth of all municipalities in question had maintained populations of greater than 10,000 people, 5 per cent greater than 20,000. By 1967, these proportions had risen to two-thirds and 35 per cent respectively.[6] During the same twenty-year period, the number of centers in the 20,000-50,000 population range increased from 4 per cent to 28 per cent. In 1947, only Metropolitan Bangkok and Chiengmai actually contained more than 25,000 people. The population of Chiengmai was about 38,000, a size now exceeded by ten cities in Thailand.

d) Urban growth is much more rapid in larger than smaller centers. Settlement profiles, excepting the Bangkok overburden, display notable etiolation. Rates of growth appear to increase in correspondence with the size of cities. During the past ten years (1960-1970), sixty-two of 120 municipal areas have had annual average growth rates in excess of the estimated average natural growth rate. Of these, only forty evidence significant net inward migration with growth rates greater than 4.0 per cent. Many smaller municipalities have lost population by net outward migration. While urban areas with populations of more than 20,000 people have grown at average annual rates greater than 7 per cent, those with with less than 20,000 have grown more slowly than their natural rates of increase.[7] Between 1947 and 1960, the ten largest urban centers accounted for 68 per cent of national urban growth. Between 1960 and 1967, their share of growth had risen to 71 per cent. Metropolitan Bangkok accounted for 61 per cent and 63 per cent respectively of national urban growth during those periods.

e) There has been a trend toward equalization of the distribution of large urban centers among regions. In 1947, five of Thailand's ten largest municipalities were located in the Central Region; two each were located in the North and South and one in the Northeast. By 1967, the Central Region had two; the North and South three each, the Northeast two. Although the Central Region increased its national urban population at the expense of other regions, equalization in the distribution of large centers indicates significant increases in rates of differentiation and growth of urban functions in the North, Northeast, and South.

Regional urbanization patterns are often of greater interest than national ones. The following descriptions are offered only as hypotheses suggested by extremely limited data.

Central Region

The Central Region has experienced large relative declines in its rural population. Most migrants from rural areas have been absorbed within semi-urban settlements and Metropolitan Bangkok, the combined populations of which now approximate 40 per cent of the regional total. Other changes have also occurred in the settlement hierarchy. Municipalities under 5,000 persons in 1947 have almost all shifted into higher size classes. Those with 5-10,000 persons stabilized and their share of regional population declined. Between 1947 and 1960, the number of municipalities in the 10-15,000 population bracket increased as a result of upward shifts, but declined in share of population; between 1960 and 1967, their number decreased, accompanied by an even greater decrease in share of regional population. During 1947-60, towns of 15-20,000 displayed, as a class, no significant net migration effect, but by 1967 their population share had dropped more rapidly than the upward shift of urban places from the class would explain. Towns in the 20-30,000 class were net recipients of migrants during the 1947-60 period, but appear to have become net losers by 1967.

In sum, between 1947 and 1967, the size of town needed to attract migrants in the Central Plain increased. Size classes above the 15-20,000 level in 1947-60, and the 20-30,000 level in 1960-67, displayed net absorption of migrants at rates that increased with city size. Metropolitan Bangkok strengthened its overwhelming dominance of the region. It and the semi-urban settlements developing at its edge absorbed the vast majority of intra-regional migrants at the expense of rural areas and small and middle-sized towns.

Southern Region

From our limited evidence, development of the settlement hierarchy in the Southern Region is following a pattern different from that of the Central Plain. Population shifts from rural areas in 1947-60 were primarily absorbed by semi-urban settlements and municipalities in the 5-10,000 population size class. As a group, however, towns of less than 5,000 persons continued to display relative vigor; although most of them shifted out of the class during the period, their loss in share of regional population was relatively small. This suggests a net absorption of migrants and the towns' continued importance in the regional economy. Urban places in the 10-15,000 class and those with populations greater than 30,000 also displayed vigor. In contrast, those in the 15-20,000 class experienced a distinct decline, their share of regional population falling even while their numbers were increased by upward shifts of lower-order towns. This pattern may indicate that a bi-modal distribution of attractions for migrants existed with centers of 15-20,000 persons unable to compete with the opportunities available in higher- and lower-order centers.

The pattern changed between 1960 and 1967. By 1967, only one municipality of less than 5,000 persons and one in the 15-20,000 class remained. Municipalities in the 5-10,000 group showed a relative decline. Places of 10-15,000 and greater than 20,000 people increased in number, shares of regional population, and dominance.

Between 1947 and 1960, municipalities of all classes tended to shift upward. After 1960, however, shifts were most notable among towns larger than 15,000 people.

Changes in the Southern settlement profile during the two decades resembled the gradual construction of a pillar by internal shifts and by rural migration to smaller and larger towns. Semi-urban development was relatively insignificant relative to that in other regions.

Northeastern Region

Between 1947 and 1967, the size distribution of all towns shifted upward. Net migration gains were high in semi-urban areas and in municipalities of greater than 15,000 persons in 1947-60 and 30,000 persons in 1960-67. Urbanization in the very rural Northeast appears to have moved quickly to the development of relatively large centers, skipping the transitional stages of small town dominance that characterized the Central and Southern Regions. Government programs and the presence of large military bases may offer a partial explanation for this occurrence.

Northern Region

Rural and urban shares of the regional population have declined over the last decade, while semi-urban settlement has grown rapidly. It also appears that the decline in urban share was borne entirely by smaller municipalities; the dominant centers of Chiengmai and Lampang have grown rapidly. Between 1947 and 1967, municipality size classes above 15,000 people increased their shares of regional population; those above 20,000 in 1947-60 and 30,000 in 1960-67 show evidence that increases were due to the net absorption of migrants as well as to shifts among size classes. Again, absorption of migrants appears to have been proportional to the size of city.

These brief regional sketches stimulate questions significant for development planners and administrators, yet current information related to them is sparse. The increasing range of urban sizes in Thailand, and the accompanying articulation of regional and national settlement hierarchies, reflect the gradual differentiation of social functions from a relatively unspecialized and rural milieu. Presumably, the evolving pattern improves Thailand's abilities to accommodate population growth and rising standards of living within the constraints of available resources and skills. We note, for example, that at the present time municipalities of greater than 30,000 persons (20,000 in the South) support activities that can attract more migrants than they produce, while municipalities of lesser size are generally unable to do so, and while larger ones demonstrate an increasing ability to offer apparently desired benefits. Moreover, the threshold concentration necessary to provide an attractive level of opportunities is rising over time.

What specific characteristics of Thai settlements of different sizes explain these patterns, and how might knowledge of them be exploited for developmental purposes? What kinds, scales and organization of activity (governmental, social, religious, educational, economic, etc.) typify settlements of different sizes throughout Thailand? How are they related to their environmental, cultural and developmental contexts, and to one another? Which kinds of generalizations may have national or regional validity, which characteristics tend to be location-specific? What trends are observable in the development and distribution of new activities? To what extent are they "natural" (i.e., responses to population growth, resource limitations, rising expectations, new technological possibilities, etc.), to what extent "induced" by government policies and programs that actively change the context of choice (e.g., highway development, economic policies, expansion of government services, "growth pole" strategies, etc.)? How will they be affected by population growth, technological progress, rising expectations and resource constraints, and what might the government do to influence these factors? How do settlements relate to one another regionally and nationally? What kinds of exchanges occur between them? How is the nature of their interdependence changing? To what extent do settlements vary in their abilities to absorb and focus national and Metropolitan influences? What changes do present patterns of spatial evolution suggest for governmental efforts to influence rural and regional development, urban and environmental management, population size and distribution?

In the preceding section of this report, we considered general trends in the distribution of the Thai population. In this, we have tried to expose relationships between those trends and developing hierarchies of urban settlement, and have suggested that central to such relationships are the kinds, scales, and organization of activities located in settlements of different sizes. In the next section we begin to search for relationships between the location of economic activity and emerging patterns of urbanization.

Regional Economies

Changes in Thai settlement patterns are probably related, among other things, to changes in regional and local patterns of economic activity. Settlement concentrations emerge in response to the diversification and specialization of economic functions accompanying development of an agricultural society, the localization of such functions in settlements best able to support them, and the "downward" flow of influences from Metropolitan Bangkok and the national government. In this report we cannot carefully examine relationships among changes in economic and settlement patterns, nor will we be able to say how government policies and programs can better affect evolving patterns of economic activity and urbanization. We can, however, present generalized profiles of regional economies and changes in them, and can begin to ask how these relate to urbanization, employment and migration trends.

During the decade 1960-1969, the Gross Domestic Product of Thailand has increased by an average of about 8.2 per cent per year.[8] Growth has not been distributed equally over the various sectors of the economy or among the regions. The manufacturing, construction, trade, service, finance,* mining, and public utilities sectors have grown at higher than average rates while agriculture** and transportation-communications have grown by below-average rates. The results have been substantial shifts in sectoral importance. (See Tables III and IV for summaries of sectoral growth, average annual growth rates, and shifts in sectoral composition of regional product and GDP.) The agricultural share of GDP has dropped from 37.8 per cent to 30.4 per cent; the shares of manufacturing, trade and services have risen from 13.3 per cent to 16.3 per cent, 15.9 per cent to 16.7 per cent, and 9.7 per cent to 10.0 per cent respectively. Accompanying these changes has been diversification in all sectors, an increasing localization of dominant sectors' activities among the different regions, and an increasing specialization of sectoral activity within all regions but the Northeast (see Table V for sectoral location quotients and coefficients of sectoral localization and redistribution).

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* The finance sector includes banking, insurance and real estate.

** Agriculture includes forestry, fishing and hunting activities.

Changes in sectoral distributions have increased regional deviations from the national mean profile in all cases but the Northeast. The Northeast has displayed the greatest rate of change in economic structure, but it began the decade with the most highly specialized and backward economy. In 1960, agriculture accounted for 56.7 per cent of its regional product; by 1969, the agricultural share had fallen to 45.7 per cent. Large relative increases in the construction, utilities, and transportation-communications sectors, fed by government priorities for infrastructural and military development in the region, have substantially altered the Northeast's economic profile. The region continues to have the lowest growth rate (6.8 per cent) and the lowest per capita income in the nation, and its per capita share of GDP has actually declined by 9.0 per cent during the decade; but the effects of government investments and the gradual diversification and specialization of agricultural functions have increased shares within the region of the service, trade, and finance sectors. The region is still

TABLE III

Estimated Rates of Growth of Gross Regional Product
by Sector, 1960/1961--1968/1969

(Million of Baht)

INDUSTRIAL ORIGIN	NORTHEAST			NORTH			SOUTH			CENTRAL			WHOLE KINGDOM		
	1960/61	1968/69	g(%)	1960/61	1968/69	g	1960/61	1968/69	g	1960/61	1968/69	g	1960/61	1968/69	g
AGRICULTURE	5,870.6	8,009.8	3.96	4,650.2	7,575.8	6.29	3,312.8	5,618.8	6.83	7,897.7	11,638.2	4.97	21,731.2	32,842.6	5.30
MINING AND QUARRYING	17.5	232.6	38.18	34.1	271.8	29.62	405.0	788.6	8.69	178.0	552.5	15.21	634.5	1,845.5	14.2[illegible]
MANUFACTURING	799.7	1,140.3	4.53	888.2	1,517.1	6.92	743.4	818.1	1.20	5,235.4	14,092.8	13.18	7,666.7	17,568.3	10.92
CONSTRUCTION	419.1	1,539.3	17.66	402.3	1,068.2	12.98	379.4	714.6	8.24	1,593.2	4,110.3	12.58	2,794.0	7,432.4	13.01
ELECTRICITY & WATER SUPPLY	15.1	185.3	36.81	77.8	591.0	28.85	19.5	99.1	22.53	171.4	434.8	12.34	283.7	1,310.0	21.07
TRANSPORTATION & COMMUNICATIONS	347.6	807.3	11.11	556.2	798.4	4.62	579.2	717.3	2.71	2,753.3	4,926.2	7.54	4,236.2	7,249.1	6.95
WHOLESALE & RETAIL TRADE	1,327.2	2,685.9	9.21	1,356.3	3,248.6	11.54	1,352.8	2,976.5	10.36	5,122.6	9,123.2	7.48	9,158.8	18,034.2	8.84
BANKING, INSURANCE & REAL ESTATE	33.4	130.2	18.54	63.3	149.9	11.38	73.5	139.9	8.38	1,012.1	3,649.7	17.39	1,182.3	4,069.7	16.71
OWNERSHIP OF DWELLINGS	251.8	308.2	2.56	189.8	226.4	2.23	170.3	225.8	3.59	1,037.4	1,375.4	3.59	1,649.2	2,135.7	3.28
PUBLIC ADMINISTRATION & DEFENSE	456.4	776.4	6.87	346.8	592.3	6.92	236.3	419.3	7.43	1,610.5	2,783.5	7.08	2,650.0	4,571.4	7.05
SERVICES	808.8	1,718.8	9.88	690.8	1,083.5	5.79	771.3	1,213.5	5.83	3,309.2	6,812.8	9.45	5,580.0	10,828.5	8.64
GROSS DOMESTIC PRODUCT (GDP)	10,347.2	17,534.1	6.81	9,255.8	17,123.0	7.99	8,043.5	13,731.5	6.91	29,920.8	59,499.4	8.97	57,566.6	107,887.4	8.17

Source: Computed from preliminary data of the National Economic Development Board as of April, 1971.

TABLE IV

Changes in Composition of Gross Regional Products 1960/61--1968/69

INDUSTRIAL ORIGIN	NORTHEAST		NORTH		SOUTH		CENTRAL		WHOLE KINGDOM	
	1960/1961	1968/1969	1960/1961	1968/1969	1960/1961	1968/1969	1960/1961	1968/1969	1960/1961	1968/1969
AGRICULTURE	56.74	45.68	50.24	44.24	41.19	40.92	26.40	19.56	37.75	30.44
MINING AND QUARRYING	0.17	1.33	0.37	1.59	5.03	5.74	0.60	0.93	1.10	1.71
MANUFACTURING	7.73	6.50	9.60	8.86	9.24	5.96	17.50	23.69	13.32	16.28
CONSTRUCTION	4.05	8.78	4.35	6.24	4.72	5.21	5.32	6.91	4.86	6.89
ELECTRICITY & WATER SUPPLY	0.14	1.06	0.84	3.45	0.24	0.72	0.57	0.73	0.49	1.21
TRANSPORTATION & COMMUNICATIONS	3.36	4.60	6.01	4.66	7.20	5.22	9.20	8.28	7.36	6.72
WHOLESALE & RETAIL TRADE	12.83	15.32	14.65	18.97	16.82	21.68	17.12	15.33	15.91	16.72
BANKING, INSURANCE & REAL ESTATE	0.32	0.74	0.68	0.88	0.91	1.02	3.38	6.13	2.05	3.77
OWNERSHIP OF DWELLINGS	2.43	1.76	2.05	1.32	2.12	1.64	3.47	2.31	2.87	1.98
PUBLIC ADMINISTRATION & DEFENSE	4.41	4.43	3.75	3.46	2.94	3.05	5.38	4.68	4.60	4.24
SERVICES	7.82	9.80	7.46	6.33	9.59	8.84	11.06	11.45	9.69	10.04
GROSS DOMESTIC PRODUCT (GDP)	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: Computed from preliminary data of the National Economic Development Board as of April, 1971.

TABLE V

Indices of Change in Sectoral and Regional Distribution of Economic Activity

Sector	Ranked Location Quotients[a]				Coefficient of Localization[b]		Coefficient of Redistribution[c]
	1960		1969		1960	1969	
Agriculture, Fisheries, and Forestry					0.16	0.20	0.04
	Northeast	1.50	NE	1.50			
	North	1.33	N	1.45			
	South	1.10	S	1.35			
	Central	0.70	C	0.64			
Mining and Quarrying					0.50	0.31	0.21
	South	4.59	S	3.36			
	Central	0.54	N	0.92			
	North	0.34	NE	0.77			
	Northeast	0.16	C	0.54			
Manufacturing					0.16	0.25	0.12
	Central	1.31	C	1.46			
	North	0.72	N	0.54			
	South	0.69	NE	0.40			
	Northeast	0.58	S	0.37			
Construction					0.05	0.04	0.06
	Central	1.09	NE	1.27			
	South	0.97	C	1.00			
	North	0.90	N	0.91			
	Northeast	0.83	S	0.76			
Electricity and Water Supply					0.20	0.30	0.27
	North	1.71	N	2.85			
	Central	1.16	NE	0.83			
	South	0.49	C	0.60			
	Northeast	0.29	S	0.60			
Transportation-Communications					0.13	0.13	0.06
	Central	1.25	C	1.23			
	South	0.98	S	0.78			
	North	0.82	N	0.69			
	Northeast	0.46	NE	0.68			
Wholesale and Retail Trade					0.05	0.06	0.05
	Central	1.08	S	1.30			
	South	1.06	N	1.13			
	North	0.92	C	0.92			
	Northeast	0.81	NE	0.92			

Sector	Ranked Location Quotients				Coefficient of Localization		Coefficient of Redistribution
	1960		1969		1960	1969	
Banking, Insurance and Real Estate					0.34	0.35	0.05
	Central	1.65	C	1.63			
	South	0.44	S	0.27			
	North	0.33	N	0.23			
	Northeast	0.16	NE	0.20			
Ownership of Dwellings					0.11	0.03	0.02
	Central	1.21	C	1.17			
	Northeast	0.85	NE	0.89			
	South	0.74	S	0.83			
	North	0.71	N	0.67			
Public Administration and Defense					0.09	0.06	0.00
	Central	1.17	C	1.10			
	Northeast	0.96	NE	1.04			
	North	0.82	N	0.82			
	South	0.64	S	0.72			
Services					0.07	0.08	0.05
	Central	1.14	C	1.14			
	South	0.99	NE	0.98			
	Northeast	0.81	S	0.88			
	North	0.77	N	0.63			

Ranked Coefficients: Regional Specialization[d] Regional Redistribution[e]

Regional Specialization 1960		Regional Specialization 1969		Regional Redistribution	
Northeast	0.19	S	0.20	NE	0.13
North	0.14	N	0.18	C	0.11
Central	0.12	NE	0.17	N	0.10
South	0.09	CP	0.13	S	0.07

a) The Location Quotient relates a region's share of a particular national sector to its share of Gross Domestic Product. Unity indicates proportionality.

b) The Coefficient of Localization indicates the relative dispersion or concentration of activity in a particular sector. It is computed as the sum of positive differences between the sector's regional and national shares divided by 100. A coefficient of zero indicates that all regional shares are proportional to the national one. As national sectoral activity becomes increasingly concentrated in a single region, the coefficient approaches unity.

c) The Coefficient of Redistribution indicates changes over time in regional distributions of sectoral activity. In this case it has been computed as the sum of positive differences between regional sectoral shares in 1960 and 1969 for each sector; the sum is divided by 100. Zero indicates no redistribution over time; unity indicates total redistribution.

d) The Coefficient of Specialization indicates the relationship between regional and national distributions of sectoral activity. It is computed as the sum of positive differences between regional and national sectoral shares for each region; the sum is divided by 100. Zero indicates proportionality, zero total disproportionality.

e) The Coefficient of Regional Redistribution indicates shifts within individual regional economic structures between 1960 and 1969.

the most depressed in the nation and the most dependent on the agricultural sector, but changes suggest preparation for more rapid economic development in the future. High rates of urbanization, a slight net inward flow of migrants, and the growth of relatively large urban centers without transition through small-town stages of evolution appear to correspond with these changes and with the fact that they have been stimulated, to a great extent, by national initiatives. Whether the relative lack of small-town development might also reflect growing disparities between subsistence and non-subsistence populations deserves further consideration.

The Central Region has experienced the highest annual rate of growth (9.0 per cent) in the nation. Its growth has been led by the manufacturing sector. The value of manufacturing activity has increased by 13.2 per cent per year during the last decade, a rate making it the dominant sector in the region and the dominant regional sector in the nation. In 1960, the Central Plain's agricultural sector predominated, regionally and nationally. (See Table VII for comparative 1960 and 1969 rankings of the top twenty regional sector contributions to GDP.) Growing at only 5.0 per cent per year, however, its share of regional product has declined from

TABLE VI

Estimated Regional Shares of Gross Domestic Product, 1960--1969

	NORTH			NORTHEAST			CENTRAL PLAIN			SOUTH			WHOLE KINGDOM Amounts in Millions	
	1960/61	1968/69	Δ %	1960/61	1968/69	Δ %	1960/61	1968/69	Δ %	1960/61	1968/69	Δ %	1960	1969
LAND AREA	33.0	33.0	-	33.6	33.6	-	19.9	19.9	-	13.5	13.5	-	0.514	sq.km.
POPULATION	21.8	21.4	-0.4	33.2	33.6	+0.4	32.5	32.6	+0.1	12.4	12.3	-0.1	26.3	34.5
URBAN	10.8	9.4	-1.4	9.1	9.4	+0.3	70.4	71.5	+1.1	9.8	9.7	-0.1	3.5	5.0
SEMI URBAN	23.3	22.4	-0.9	29.9	25.2	-4.7	36.3	43.6	+7.3	10.5	8.8	-1.7	1.4	3.6
URBAN & SEMI-URBAN	14.3	14.8	+0.5	14.8	16.0	+1.2	60.9	59.9	-1.0	10.0	9.3	-0.7	4.9	8.6
RURAL	23.6	23.7	+0.1	37.4	39.5	+2.1	26.1	23.6	-2.5	13.0	13.3	+0.3	21.4	26.0
EMPLOYMENT	21.7	24.8*	+3.1[+]	36.1	34.7*	-1.4[+]	29.6	30.9*	+1.3[+]	12.6	9.8*	-2.8[+]		
LAND/POPULATION	1.51	1.54	Δ +2.0%	1.01	1.00	Δ-1.0%	0.61	0.61	Δ0%	1.09	1.10	Δ+1.0%		
EMPLOYMENT/POPULATION	1.00	1.16*	Δ+16.0%[+]	1.09	1.02*	Δ-6.4%[+]	0.91	0.95*	Δ+4.4%[+]	1.02	0.80*	Δ-21.6%		
INDUSTRY													(millions of Baht)°	
AGRICULTURE, FISHERIES, FORESTRY	21.4	23.1	+1.7	27.0	24.4	-2.6	36.3	35.4	-0.9	15.2	17.1	+1.9	21,731.2	32,842.6
MINING & QUARRYING	5.4	14.7	+9.3	2.8	12.6	+9.8	28.1	29.9	+1.8	63.8	42.7	-21.1	634.5	1,845.5
MANUFACTURING	11.6	8.6	-3.0	10.4	6.5	-3.9	68.3	80.2	+11.9	9.7	4.7	-5.0	7,666.7	17,568.3
CONSTRUCTION	14.4	14.4	0	15.0	20.7	+5.7	57.0	55.3	-1.7	13.6	9.6	-4.0	2,794.0	7,432.4
ELECTRICITY & WATER SERVICES	27.4	45.1	+17.7	5.3	14.2	+8.9	60.4	33.2	-27.2	6.9	7.6	+0.7	283.7	1,310.0
TRANSPORTATION & COMMUNICATIONS	13.3	11.0	-2.3	8.2	11.1	+2.9	65.0	68.0	+3.0	13.7	9.9	-3.8	4,236.2	7,249.1
WHOLESALE & RETAIL TRADE	14.8	18.0	+3.2	14.5	14.9	+0.4	55.9	50.6	-5.3	14.8	16.5	+1.7	9,158.8	18,034.2
BANKING, INSURANCE & REAL ESTATE	5.4	3.7	-1.7	2.8	3.2	+0.4	85.6	89.7	+4.1	6.2	3.4	-2.8	1,182.3	4,069.7
OWNERSHIP OF DWELLINGS	11.5	10.6	-0.9	15.3	14.4	-0.9	62.9	64.4	+1.5	10.3	10.6	+0.3	1,649.2	2,135.7
PUBLIC ADMINISTRATION AND DEFENSE	13.1	13.0	-0.1	17.2	17.0	-0.2	60.8	60.9	+0.1	8.9	9.2	+0.3	2,650.0	4,571.4
SERVICES	12.4	10.1	-2.3	14.5	15.9	+1.4	59.3	62.9	+3.6	13.8	11.2	-2.6	5,580.0	10,828.5
GDP	16.1	15.9	-0.2	18.0	16.3	-1.7	52.0	55.2	+3.2	14.0	12.7	-1.3	57,566.6	107,887.4
GDP/POPULATION	0.74	0.74	0% Δ	0.54	0.49	-9.3%Δ	1.60	1.69	+5.6%Δ	1.13	1.03	-8.9%Δ		
GDP/EMPLOYMENT	0.74	0.66*	Δ-10.8%	0.50	0.51*	Δ +2.0%	1.76	1.70*	Δ-3.4%	1.11	1.37	Δ+23.4%		
% GDP 1969/1960	0.99			0.91			1.60			0.91				

* 1966 figures

+ for period 1960-66

o Baht in 1962 Prices

Sources: Population figures are computed from registration records in the Department of Local Administration. Employment figures are derived from Report of Labor Force Survey, Rounds 1-4, National Statistics Office. Rgeional and national product figures are computed from preliminary data of the National Economic Development Board as of April, 1971.

TABLE VII

Ranked Regional Sector Contributions to GDP in 1960 and 1969: Top Twenty Sectors

Rank	1960 Sector	Value* (million of ฿) 1962 prices	Rank Regional	Rank Sectoral	1969 Sector	Value* (million of ฿) 1962 prices	Rank Regional	Rank Sectoral
1.	Agriculture(Central)	7,898	1	1	Manufacturing(Central)	14,092	1	1
2.	Agriculture (Northeast)	5,871	1	2	Agriculture (Central)	11,638	2	1
3.	Manufacturing (Central)	5,235	2	1	Trade (Central)	9,123	3	1
4.	Trade (Central)	5,123	3	1	Agriculture (Northeast)	8,009	1	2
5.	Agriculture (North)	4,650	1	3	Agriculture (North)	7,575	1	3
6.	Agriculture (South)	3,313	1	4	Services (Central)	6,812	4	1
7.	Services (Central)	3,309	4	1	Agriculture (South)	5,618	1	4
8.	Transportation-Communications (Central)	2,753	5	1	Transportation-Communications(Central)	4,926	5	1
9.	Public Administration-Defense(Central)	1,611	6	1	Construction(Central)	4,110	6	1
10.	Construction(Central)	1,593	7	1	Finance(Central)	3,650	7	1
11.	Trade(North)	1,356	2	2	Trade(North)	3,249	2	2
12.	Trade(South)	1,353	2	3	Trade(South)	2,977	2	3
13.	Trade(Northeast)	1,327	2	4	Public Administration-Defense (Central)	2,784	8	1
14.	Manufacturing(North)	888	3	2	Trade(Northeast)	2,686	2	4
15.	Services(Northeast)	809	3	2	Services(Northeast)	1,719	3	2
16.	Manufacturing(Northeast)	800	4	3	Construction(Northeast)	1,539	4	2
17.	Services(South)	771	3	3	Manufacturing(North)	1,517	3	2
18.	Manufacturing(South)	743	4	4	Ownership of Dwellings (Central)	1,375	9	1
19.	Services(North)	691	4	4	Services(South)	1,214	3	3
20.	Transportation-Communications(South)	579	4	2	Manufacturing(Northeast)	1,140	5	3

* Source: Preliminary data of the National Economic Development Board as of April, 1971.

26.4 per cent to 19.6 per cent, while that of the manufacturing sector has risen from 17.5 per cent to 23.7 per cent. It continues to provide the second largest regional sector contribution to GDP.

The region has increased its dominance of the national service and finance sectors (from 52.0 per cent to 55.2 per cent and from 85.6 per cent to 89.7 per cent respectively) over the last ten years; these sectors have gained in regional importance as well. Growth in construction (12.9 per cent per year) has remained almost apace with the national average. The relative vigor of "progressive" sectors has increased regional per capita product, already three times that of the Northeast and more than double that of the North, despite the heavy net migration into Metropolitan Bangkok and the region.

Spatially, these economic trends appear related to the dynamic growth of manufacturing, services, commerce and finance in the Metropolitan area, the gradual extension of the Metropolitan zone by means of semi-urban settlements and industrial development, the movement of Plains residents into the Metropolis and its environs from towns and rural areas, and the decline of urban centers that have been unable to compete with Metropolitan attractions.

An interesting variation on the theme of Central dominance, however, is the gradual shift of trade activities to other regions. The value of wholesale and retail trade has grown in the Northeast by 9.2 per cent per year during the decade, in the South by 10.4 per cent, and in the North by 11.5 per cent; the Central rate has been only 7.5 per cent. The results have been a shift of the national trade share from the Central to the other regions, and an increasing dominance of trade contributions to the regional products of the outlying regions. Trade now accounts for 19.0 per cent of regional product in the North, 15.3 per cent in the Northeast, and 21.7 per cent in the South. All of these represent large increases from 1960 levels, although their rankings among regional sectors remain the same (i.e., second behind agriculture). We suspect that the reasons for increases in the importance of trade differ in composition and source among regions, and that they have significant implications for regional patterns of urbanization. These hypotheses deserve analysis.

Growth of trade in the South is particularly significant as it represents the only apparent positive economic trend in the region. The structure of the Southern economy has changed less than that of any other region (See Table V) and, although it deviated least from the National profile in 1960, now it deviates most from the national mean. This suggests that the region has not shared structural developments with the rest of the nation. Historically, the Southern economy, based on rubber and tin, has been better off than the North and Northeast. Its share of GDP has exceeded its shares of population, land area, and labor force. This situation is changing: the region's share of GDP declined over the last decade, as did its relative per capita share of regional product. Similar trends also occurred in the Northeast, but the South has displayed none of the structural shifts that indicate promise for the Northeast. Manufacturing has grown by only 1.2 per cent per year, contributing less to the regional economy than it does in any other region. The same is true for construction. Finance, transportation-communications, and utilities sectors have grown more slowly than in the North and Northeast. This has tended to reduce advantages previously held by the South, but it also indicates regressive trends that may partially account for relatively high rates of outward migration.

The South is the only region that has not shown a substantial decline in the relative importance of its agricultural sector; the agricultural share of regional product was 41.1 per cent in 1960 and 40.9 per cent in 1969. Southern agriculture had the highest regional growth rate in the nation (6.8 per cent per year). This is still below the regional growth rate of 6.9 per cent and is apparently not compensating for a stagnant manufacturing sector and a relative absence of infrastructural development. Mining continues to show consistent growth but, despite its recognized importance, directly contributes less than 6.0 per cent of the region's value product and has less opportunity for new discovery and expansion in the South than in the rest of the nation. How all of these factors relate to the notable growth in the trade sector and to the continued importance of small towns and small-town functions in the South, as compared with other regions, are interesting questions.

The economy of the North has been growing at about 8.0 per cent per year over the last decade. It continues to be dominated by an agricultural sector that contributes 44.2 per cent of the regional product; that share represents a 6.0 per cent decline since 1960. At 6.3 per cent, agricultural growth has been below the regional rate but sufficiently high to increase the region's share of national agricultural product. The manufacturing sector's share of regional product has declined slightly, although its product has grown by almost 7.0 per cent per year. Service and transportation-communications shares have also declined as results of relatively low rates of growth; both sectors are economically less important in the North than elsewhere.

TABLE VIII

The Relations of Regional Sectoral Growth to Regional Growth and National Sectoral Growth
1960-1969

SECTOR	REGION								
	NORTHEAST		NORTH		CENTRAL		SOUTH		WHOLE KINGDOM
	Regional Sector% / Regional Prod %	R Sector% / N Sector%	R Sector% / R Prod. %	R Sector% / N Sector%	R Sector% / R Prod. %	R Sector% / N Sector%	R Sector% / R Prod. %	R Sector% / N Sector%	N Sector% / GDP %
Agriculture, Forestry and Fisheries	0.58	0.75	0.79	1.19	0.55	0.94	0.99	1.29	0.65
Mining and Quarrying	5.61	2.67	3.71	2.07	1.70	1.07	1.26	0.61	1.75
Manufacturing	0.67	0.41	0.87	0.63	1.47	1.21	0.17	0.11	1.34
Construction	2.59	1.36	1.62	1.00	1.40	0.97	1.19	0.63	0.97
Electricity and Water Supply	5.41	1.74	3.61	1.37	1.38	0.59	3.26	1.07	2.58
Transportation-Communications	1.63	1.60	0.58	0.66	0.84	1.08	0.39	0.39	0.85
Wholesale and Retail Trade	1.35	1.04	1.44	1.31	0.83	0.85	1.50	1.17	1.08
Banking, Insurance, Real Estate	2.72	1.11	1.42	0.68	1.94	1.04	1.21	0.50	2.05
Ownership of Dwellings	0.38	0.78	0.28	0.68	0.40	1.09	0.52	1.09	0.40
Public Administration and Defense	1.01	0.97	0.87	0.98	0.79	1.00	1.08	1.05	0.86
Services	1.45	1.14	0.72	0.67	1.05	1.09	0.84	0.67	1.06
GDP		0.83		0.98		1.10		0.85	

Source: Computed from preliminary data of the National Economic Development Board as of April, 1971.

In a more positive direction, construction, trade, mining, and utilities shares have increased substantially, both within the North and within national sectors. The value of electricity and water services produced in the North now comprises over 45 per cent of the national total. Its rapid growth since 1960, approximately 28.9 per cent per year, reflects a major government effort to tap its water resource wealth. The North's share of GDP is only three-fourths its share of population, but the ratio between GDP and population shares has not declined, as it has in the Northeast and South, since 1960.

In general, Northern data give the impression of a region with consistent and undramatic progress, lacking the regressive trends of the South, the depressed but incipient development of the Northeast, and the dynamic changes of the Central Plain. Primary production activities, although of declining numerical importance, appear to be progressive and leading sectors. Agricultural productivity is relatively high and rising, intensification stimulated by land limitations and the increased availability of irrigation water. We suspect that gains in trade, construction and finance sectors are to a great extent results of vigorous primary production activities that are "spinning off" specialized functions, previously defined as primary, to other sectoral categories. Growth in manufacturing,

TABLE IX

Average Annual Growth Rates of Regional Sectors, 1960--69

REGION	Sectors with Growth Rates:					
	0-4%	4-7%	7-10%	10-13%	13+%	Average
Central	Ownership of Dwellings	Agriculture	Transportation-Communications Trade Public Administration-Defense Services	Construction Utilities	Mining Manufacturing Finance	9.0%
Northeast	Agriculture Ownership of Dwellings	Manufacturing Public Administration-Defense	Trade Services	Transportation-Communications	Construction Utilities Finance Mining	6.8%
North	Ownership of Dwellings	Agriculture Manufacturing Public Administration-Defense Services Transportation-Communications		Construction Trade Finance	Mining Utilities	8.0%
South	Manufacturing Transportation-Communications Ownership of Dwellings	Agriculture Services	Mining Construction Finance Public Administration-Defense	Trade	Utilities	6.9%
WHOLE KINGDOM	Ownership of Dwellings	Agriculture Transportation-Communications	Trade Public Administration-Defense Services	Manufacturing	Mining Construction Utilities Finance	8.2%

for example, is almost entirely related to the specialization and concentration of primary product processing activities. The same is true in the Northeast and South. but neither of those regions displays the combinations of growth in primary sectors, manufacturing, trade and finance, and of sectoral redistribution and regional specialization that seem apparent in the North. Northern data do not suggest that regional development has been led by government investment programs, as in the Northeast, and indicate greater diversification and resiliency than in the South. Development seems relatively self-generated, occurring primarily through the diversification and intensification of the use of natural resources.

We assume that Northern urbanization trends are related to these economic ones, and that inter-regional urbanization differences are related to variations in patterns of economic development. For example, Northern semi-urban growth accompanying relative declines in all urban centers save the largest, may correspond spatially to the rapid intensification of Northern agriculture. This may also be so in the Central Plain, although for different reasons (e.g., those related to the proximity of Bangkok). Urbanization trends in the Northeast and South are clearly different from those in the North, as are the economic trends related to them.

The links between spatial and economic development seem understandable and, to some extent, amenable to the influence of public policy. Our regional profiles are too general to be of use in policy formation, but their very inadequacy is perhaps a significant contribution to thinking about urbanization in Thailand. It is clear that regional and sectoral aggregates can support analyses of little practical value; categories like "manufacturing," "agriculture," and "Northeast" submerge large distinctions of operational importance. Appropriate studies of sub-sectoral and sub-regional relationships can be extremely fruitful for development strategists who, as a group, generally lack information essential for shaping the spatial attributes of their policies and programs. Regional profiles, vulnerable to specific comment, will hopefully incite interest in such studies.

The following section on employment is also based on generalized data, but it exposes further questions worthy of future consideration.

Employment

To suggest that shifts in economic structure and changes in the spatial organization of human activity are related is relatively easy. To demonstrate the substance of such relationships in Thailand is difficult. Changes in

economic activity, demands on resources, relative productivities of labor, factor price relationships, income levels and distribution, propensities for concentration and dispersion, and the general quality of life. These and other relationships form spatial gradients that govern movements of people, resources, and enterprises and affect the development of settlement hierarchies.
Spatial differences in employment opportunities comprise one stimulus to changes in the distribution of population. Information in this area is scarce, yet several tendencies are discernible.

Between 1960 and 1969, employment in Thailand grew at a slower annual rate (2.5 per cent) than did population (3.1 per cent) or Gross Domestic Product (8.2 per cent). (See Table X.) These figures imply present or potential increases in unemployment and an average increase in labor productivity. Changes in the labor force differed among economic sectors and indicate definite shifts toward more productive areas of activity. The agricultural sector* continued to dominate Thai employment, but its labor force grew by only 2.1 per cent per year, a rate lower than that of rural population growth (2.4 per cent). As a result, its share of the national labor force declined from 82.3 per cent to 79.3 per cent. Its share

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* "Agriculture" includes forestry, fisheries and hunting.

TABLE X

National Employment Trends by Sector, 1960-1969

Sector	Share of Labor Force 1960	Share of Labor Force 1969	Change in Share	Average Annual Rate of Growth	Distribution of Sectoral Employment by Sex 1960 Male	1960 Female	1969 Male	1969 Female
Agriculture	82.3%	79.3%	-3.0%	2.05%	49.2%	50.8%	51.3%	48.7%
Mining	0.2	0.1	-0.1	-1.76	74.8	25.2	89.3	10.7
Manufacturing	3.4	4.2	+0.8	4.68	62.4	37.6	57.2	42.8
Construction	0.5	0.9	+0.4	8.02	90.8	9.2	92.7	7.3
Utilities	0.1	0.1	--	2.90	94.9	5.1	89.6	10.4
Commerce	5.7	6.9	+1.2	6.29	46.6	53.4	46.1	53.9
Transportation-Communications	1.2	1.6	+0.4	5.70	94.5	5.5	96.7	3.3
Services	4.8	7.0	+2.2	7.11	69.9	30.1	59.3	40.7
Activities not adequately described	1.8	0	-1.8	--	63.2	36.8	93.1	6.9
Total	100.00	100.00		2.47	51.60	48.40	52.92	47.08

Sources: Computed from
a) Population Census--1960, National Statistics Office, 1961.
b) Preliminary data of the 1969 Labor Force Survey, National Statistics Office.

of GDP declined even more, from 37.7 per cent to 30.4 per cent indicating a drop in labor productivity relative to the national average.

Relative shifts in employment from agriculture were absorbed by the construction, service, commerce, transportation-communications, and manufacturing sectors, all of which increased their shares of the national labor force.* Employment in these sectors has increased at annual average rates of 8.0 per cent, 7.1 per cent, 6.3 per cent, 5.7 per cent and 4.7 per cent respectively. These are lower than growth rates in sectoral contributions to GDP, and only in the service sector is the employment share approaching that of GDP. Although the five sectors collectively accounted for less than 16 per cent of 1960 employment, they created almost 38 per cent of the decade's new jobs. The service, commerce, and manufacturing sectors were particularly important generators of job opportunities, absorbing 15 per cent, 11 per cent and 7.0 per cent respectively of the increment to national employment. Services and commerce increased their shares of employment relative to their shares of GDP; manufacturing ratios of employment to GDP shares were virtually the same in 1960 and 1969, suggesting that increased levels of employment were not accompanied by declines in relative labor productivity.

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*Sectoral definitions are different for employment data than for the production data of the preceding section. "Services" includes government administration as well as private service activities. "Commerce" includes wholesale and retail trade, banking, real estate and insurance. "Transportation-communications" includes storage. Other differences probably exist, but cannot be discerned from available information. Comparisons of production and employment data must therefore be approached with caution.

Reliable information about changes in sectoral employment among regions is not obtainable. However, data is available which allow comparisons between employment conditions in Metropolitan Bangkok and in other municipalities as a group. Tables XI and XII summarize that of most interest to us.

Between 1963 and 1969 the number of jobs in Bangkok increased more than twice as rapidly as in "other municipalities." While jobs in "other municipalities" increased only slightly faster than their populations, the Bangkok rate of increase was about 80 per cent higher than the rate of population growth. In Bangkok, the number of jobs in the manufacturing, construction, commerce, and transportation-communications sectors increased even more rapidly than the Metropolitan average. Job growth in the service sector was below average and agricultural employment declined in absolute as well as relative terms. Although the rates of employeemnt growth were lower in "other municipalities" than in Bangkok in all key sectors but agriculture, the proportional increases in manufacturing and service were much higher. New agricultural jobs were generated as fast as jobs in the manufacturing sector, or at about a 50 per cent greater rate than population increase. Transportation-communications and construction sectors increased more rapidly than average employment gains, but in lower proportion to the average than in Bangkok. The commerce sector, although displaying a large increase in GDP shares in regions outside the Central Plain, showed a rate of employment increase only one-third that of the "other municipalities" average.

Some interesting contrasts emerge: first, although agriculture's share of total employment declined in the nation, agricultural employment in "other municipalities" grew rapidly. This implies that agricultural employment is probably increasing at less than 2 per cent per year in rural Thailand, although natural population growth in rural areas exceeds 3 per cent; agricultural job opportunities are shifting toward smaller urban centers. Second, employment in the service sector is growing at a below-average rate in Bangkok, but is expanding more rapidly in "other municipalities" than that in any other sector; however, the relations between growth in sectoral employment and population are almost identical in both cases. The service sector is the only one that seems to display a direct link between employment opportunities and population size. Third, the contributions of commerce to GDP have decentralized over the last decade, yet employment trends in the sector indicate rapid concentration of jobs

TABLE XI

Composition of Labor Force in Metropolitan Bangkok and "Other Municipalities," 1963 and 1969

Sector	Sectoral Shares of Labor Force					
	1963		1969			
	Metropolis	Other Municipalities	Metropolis	Other Municipalities	Rural	Whole Kingdom
Agriculture	2.38%	12.20%	1.58%	13.29%	88.18%	79.3%
Mining	0.14	0.44	0.03	0.79	0.12	0.1
Manufacturing	20.03	13.51	21.73	14.76	2.35	4.2
Construction	4.27	2.66	5.26	2.78	0.47	0.9
Utilities	0.97	0.33	0.99	0.57	0.03	0.1
Commerce	30.65	34.73	31.16	30.41	3.91	6.9
Transportation-Communications	6.17	6.74	6.87	6.99	0.94	1.6
Services	33.37	27.33	32.33	30.41	3.98	7.0
Not Described	1.50	2.05	0.06	0	0.02	0

Sources: Computed from
a) Report of Labor Force Survey, Rounds 1-4, National Statistics Office, 1964.
b) Preliminary Data of 1969 Labor Force Survey, National Statistics Office, 1970.

TABLE XII

Changes in Labor Force in Metropolis and "Other Municipalities" Between 1963 and 1969

Sector	Sectoral Increase		Sectoral Increase/Total Increase		Sectoral Increase/Population Increase	
	Metropolis	"Other Municipalities"	Metropolis	"Other Municipalities"	Metropolis	"Other Municipalities"
Total	59.3%	25.3%	-	-	1.8	1.05
Agriculture	12.5	36.4	-	1.5	-0.4	1.5
Manufacturing	72.8	36.9	1.2	1.5	2.2	1.5
Construction	96.2	30.9	1.6	1.2	2.9	1.3
Commerce	61.9	9.7	1.04	0.4	1.8	0.4
Transportation-Communications	77.2	30.0	1.3	1.2	2.3	1.2
Services	54.3	39.4	0.9	1.6	1.6	1.6
	Population Increase					
	33.5	24.2				

Sources: Computed from
a) Report of Labor Force Survey, Rounds 1-4, National Statistics Office, 1964.
b) Preliminary Data of 1969 Labor Force Survey, National Statistics Office, 1970.

in Metropolitan Bangkok. This suggests the possibilities that Bangkok-centered enterprises are primarily responsible for commercial growth outside the Central Plain, or that virtually all commercial employment in the Plain has shifted from other urban centers to the Metropolis. The distinction is a significant one for understanding urbanization in Thailand, but it cannot be analyzed on the basis of available information.

Finally, the employment profile of Metropolitan Bangkok is shifting toward the manufacturing, commerce, transportation-communications and construction sectors, and away from services and agriculture. "Other municipalities" show increases in the importance of agriculture, manufacturing, and services, and a marked decline of the commerce sector as a source of jobs. A substantial shift of agricultural employment seems to be occurring from rural areas to smaller urban centers. Aside from the agricultural and service sectors, job opportunities are increasingly concentrated in the Metropolitan area.

These conclusions are deficient in that they are based on information that does not distinguish among "other municipalities," or expose differences, perhaps radical, within sectoral categories. Trends for "other municipalities" may differ along a gradient of municipality size; growth in agricultural jobs, for example, is likely to be concentrated in relatively small centers, that of manufacturing jobs in relatively larger ones. Trends are also undoubtedly sensitive to regional differences hidden by data aggregation, growth of manufacturing employment, for example, may be concentrated in Central Plain municipalities on the periphery of Metropolitan Bangkok. Intra-sectoral differences are important whether a manufacturing activity involves the home production of brooms or the fabrication of steel products is significant in terms of economic and spatial implications. To understand the relationships among changes in economic activity, employment opportunities, and settlement patterns therefore requires more detailed information.

Data on variations in wage rates and skill requirements, both sectoral and locational, would be valuable in attempting to determine employment gradients and migration patterns. It was not available for analysis in this report, but can probably be compiled from records in existence.

Enterprise organization affects the spatial qualities of different kinds of economic activity. The Board of Investment has complete information on the size, work force, production, investment, and location of industrial operations in Thailand. We did not have the opportunity to review it for this report, but to do so would be helpful. We did obtain information about the average employee-worker ratios in different sectors, which is one indicator of enterprise organization and of changes occurring in organizational patterns. Table XIII summarizes these ratios for the years 1960 and 1969.

TABLE XIII

Share of Work Force Classified as "Employee," 1960 and 1969

Sector	1960	1969	Change
Agriculture	3.1%	2.9%	-0.2%
Mining and Quarrying	63.8	46.0	-17.8
Manufacturing	50.3	51.1	+0.8
Construction	82.1	82.5	+0.4
Utilities	95.7	100.0	+4.3
Commerce	12.4	14.0	+1.6
Transportation-Communications	64.0	53.7	-10.3
Services	80.8	70.3	-10.5
Total	11.9	12.1	+0.2

Source: Computed from
a) Population Census-1960, National Statistics Office, 1961
b) Preliminary Data of 1969 Labor Force Survey, National Statistics Office, 1970

Only 3.0 per cent of workers in the agricultural sector are hired laborers, a proportion that has not changed much over the last decade.* About half the workers in manufacturing and over 80 per cent in construction were employees in 1960 and remained so in 1969. In the service sector, the percentage of employees in the labor force declined from about 81 per cent to 70 per cent between 1960 and 1969. The transportation-communications sector showed a similar relative increase in self-employment, its percentage of employees declining from 64 per cent to 54 per cent. In the national economy, the hired portion of the labor force has stayed at about 12 per cent over the decade.

The absolute and relative growth of female participation in the service, commerce, and manufacturing sectors was much more rapid than that of males. Women now account for 41 per cent, 54 per cent, and 43 per cent of the work forces respectively in these sectors (See Table X). In commerce their dominance is not new, but their increase in service and manufacturing activity suggest trends toward the equal participation with men that already exists in agriculture. It is notable that self-employment is generally much more prevalent among women than men. This pattern has changed slightly in all but the service sector during the last decade. Construction and transportation-communications sectors have overwhelmingly male labor forces.

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* It is interesting to note that only about 10 per cent of farmers in the South, 8.0 per cent in the Northeast, and 16 per cent in the North are tenants. Tenancy in the Central Plain has risen to over 40 per cent and now exceeds 80 per cent around Bangkok. The regional distribution of farmer organizations is also interesting: the Northeast has about twice the number (2,030) as the Central Plain (951) and the North (1,067), and about six times the number in the South (338). (From Some Important Statistics and Charts on Farmers, Farming, and Rice, National Statistics Office, September 1970).

A number of ideas and questions emerge from this brief discussion of sectoral employment patterns.

1) When a man seeks work outside of the agricultural sector, he will probably shift from self-employed to hired status. Differential opportunities for hire are related to the size, organization, productivities, skill requirements, degrees of specialization and locational requisites of various enterprises. These relationships are amenable to analysis; we would expect a correlation between them and the evolution of settlement hierarchies in Thailand. Much relevant information is available, although in rough form. Analyzing it in terms of its implications for urban growth should provide insights useful in the formulation of spatial strategies of development.

2) Female employment is a very significant feature of the Thai economy. Women represent almost half of the active labor force and clearly make major contributions to family income. We suspect that the locational characteristics of what women perceive as employment opportunities differ substantially from those of men, and that these have

an important influence on patterns of migration and urban settlement. The relatively large degree of self-employment among women, for example, may suggest a high preference for flexible economic activities that can be coordinated with home functions. If this is so, then a major part of the labor force is committed to economic activity near or within the home. The large portion of self-employment in Thai commerce and manufacturing may be related to preferences for home enterprise. This would have significant implications for patterns of urban structure and growth, and for plans and programs that attempt to manipulate them.

3) Economic analyses of migration usually assume the "worker" and the "wage" as fundamental units of interest. In Thailand, however, the extended family appears to be the basic economic unit, even when not resident in the same location; this seems as true in the center of Bangkok as it is in the hinterland. Moreover, within the extended family, wage earnings are rarely the only, or even primary, sources of income. The extended family is an efficient economic organization that collectively taps numerous and diverse opportunities. Individuals are usually involved in several, often unrelated, forms of employment. How the family perceives migratory possibilities and economic and settlement opportunities

seems an important question for urban planning and management. Such perceptions embody the joint interests of a number of men and women, most of whom expect to play an economic role in the family.

The results of a household expenditure survey in 1963[9] indicate that only one-third of family income in urban and semi-urban areas, and one-fifth in rural areas, were earned from wages and salaries (See Table XIV). Regional figures did not differ substantially from these national means. Self-employment accounted for 50-60 per cent of family income in all regions and among urban, semi-urban and rural families. Rural families in the Northeast and Metropolitan families were the sole exceptions. The former drew a relatively larger share of their incomes from the consumption of home produce; the latter earned about half their incomes from wages and salaries. The diversity of family income sources that these data suggest, and the fact that this pattern does not differ significantly from countryside to city, is extremely interesting.

4) Intra-sectoral differences are important for understanding economic aspects of urbanization. The manufacturing and agricultural sectors in Thailand provide two dramatic examples. The fact that half the manufacturing labor force is self-employed emphasizes the existence of

striking discontinuities in the forms of manufacturing activity. What it means in terms of the character, productivity, and locational significance of manufacturing enterprise cannot be discerned from sectorally aggregated information. Agricultural employment appears to be shifting to sub-Metropolitan urban centers. Why this is so, what changes in the content and organization of agricultural jobs are accompanying it, and how it relates to changes in non-agricultural activities dependent on agriculture, are also questions that cannot be answered with sectoral information.

5) Organization of economic activity is related to the spatial distribution of economic opportunity. Its role in the process of urbanization has not been considered in Thailand. The commerce sector, for example, displays a growing relative concentration of jobs in Bangkok, a dispersion of trade activities, and a high rate of concentration in finance. Organizational distributions of authority and resources appear to be changing rapidly, but the forms they are assuming, and their spatial relationships to one another and with other sectors, is unclear. The service sector, with its increase in national and local importance and its large relative declines in the proportion of hired labor is another example that deserves analysis.

TABLE XIV

Summary of 1963 Household Expenditure Survey Results[a]

ITEM	LOCATION								
	Metropolis	Central Region		Northeast		North		South	
		Urban and Semi-urban	Rural	Urban and Semi-urban	Rural	Urban and Semi-urban	Rural	Urban and Semi-urban	Rural
Average No. of Family Members[b]	5.5	5.4	5.5	5.3	5.6	5.4	5.9	5.1	5.3
INCOME	1,519.27	1,072.58	665.33	1,097.39	347.11	833.67	377.75	1,205.97	619.41
Wages & Salaries	785.01(52%)	354.27(33%)	131.79(20%)	405.51(37%)	64.80(18%)	224.53(27%)	73.92(20%)	400.28(33%)	150.09(24%)
Self-employment	564.32(37%)	591.93(55%)	411.72(62%)	565.08(52%)	121.57(35%)	503.77(60%)	210.66(56%)	727.02(60%)	386.02(62%)
Value of rice drawn from storage	-	8.63	72.25	8.35	98.26(28%)	26.47	76.47	6.78	69.15
Other Sources	169.44	117.75	49.57	118.45	62.48	78.90	16.70	71.89	14.15
EXPENDITURES[c]	1,438.15	1,048.33	753.35	1,104.97	406.46	849.20	436.72	1,181.54	685.62
Food & Beverages	646.42	434.69	300.43	436.71	178.05	308.42	181.88	512.99	292.65
Clothing & Materials	128.49	145.34	133.11	155.58	67.47	143.53	80.65	144.62	107.63
Housing & Furnishings	109.50	85.23	64.50	86.75	31.80	91.55	44.12	116.64	83.31
Others	553.74	383.12	255.31	425.93	129.14	305.70	130.07	407.29	202.03
Decrease in assets or increase in liabilities	238.54	545.66	384.35	302.47	248.19	291.24	194.95	401.20	230.25
TOTAL RECEIPTS	1,757.91	1,618.24	1,049.68	1,399.86	595.30	1,124.91	572.70	1,607.17	849.66
Increase in assets or decrease in liabilities	313.82	543.30	271.61	285.96	87.77	246.47	129.86	335.91	153.03
TOTAL EXPENDITURES	1,751.97	1,591.68	1,024.96	1,390.93	494.23	1,095.67	566.58	1,517.45	838.65

a. Figures are given in Baht on monthly basis.

b. Average family sizes are taken from 1960 census.

c. Includes value of rice taken from storage for family use.

Source: Household Expenditure Survey, 1963, National Statistics Office, 1964.

6) These points raise questions about economic and spatial relationships: what economic patterns are characteristic of different sized settlements among the various regions? What are the relative productivities of different kinds and sizes of settlements? How and why are they changing? What gradients emerge among them to stimulate movements of people and resources? How are they being affected by government action?

The household expenditure survey of 1963 gives some idea of gradients among different settlement types. It demonstrates that although expenditures were about 30 per cent higher in Bangkok than in other urban centers, and almost twice as great in provincial urban areas than in rural areas, family income would have increased relative to expenditure if a family moved from rural to urban areas or from sub-metropolitan urban areas to Bangkok. Income-expenditure gradients in 1963 to the extent that they indicated welfare as well as monetary differentials, would clearly have guided people toward Bangkok. (See Table XV). Urbanization is the spatial dimension of development. In Thailand today, it is as much a force in the rural hinterland as it is in the massive concentration of resources and people in Metropolitan Bangkok.

TABLE XV

Average Local Income and Expenditures as Proportions of Metropolitan Income and Expenditures, 1963

ITEM	LOCATION								
	Metropolis	Central Region		Northeast		North		South	
		Urban & Semi-urban	Rural	Urban & Semi-urban	Rural	Urban & Semi-urban	Rural	Urban & Semi-urban	Rural
Income	1.00	0.71	0.44	0.72	0.23	0.55	0.25	0.79	0.41
Wages and Salaries	1.00	0.45	0.17	0.52	0.08	0.29	0.09	0.51	0.19
Self-employment	1.00	1.05	0.73	1.00	0.22	0.89	0.37	1.29	0.68
Expenditures	1.00	0.73	0.52	0.77	0.28	0.59	0.30	0.82	0.48
Food and beverages	1.00	0.67	0.46	0.68	0.23	0.48	0.28	0.79	0.45
Housing and furnishings	1.00	0.78	0.59	0.79	0.29	0.84	0.40	1.07	0.76

Index Rankings

Total Income

Metropolis	1.00
South (Urban & Semi-urban)	.79
Northeast (U & S-U)	.72
Central (U & S-U)	.71
North (U & S-U)	.55
Central (Rural)	.44
South (Rural)	.41
North (Rural)	.25
Northeast (Rural)	.23

Total Expenditures

Metropolis	1.00
South (Urban & Semi-urban)	.82
Northeast (U & S-U)	.77
Central (U & S-U)	.73
North (U & S-U)	.59
Central (Rural)	.52
South (Rural)	.48
North (Rural)	.30
Northeast (Rural)	.28

$\frac{\text{Difference between Local and Metropolitan Income Index}}{\text{Difference between Local and Metropolitan Expenditure Index}}$

Metropolis	-
Northeast (Urban & Semi-urban)	1.22
South (U & S-U)	1.77
Central (Rural)	1.16
South (Rural)	1.13
North (U & S-U)	1.10
Central (U & S-U)	1.07
North (Rural)	1.07
Northeast (Rural)	1.07

Source: Computed from Table XIV.

URBANIZATION AND THE METROPOLIS

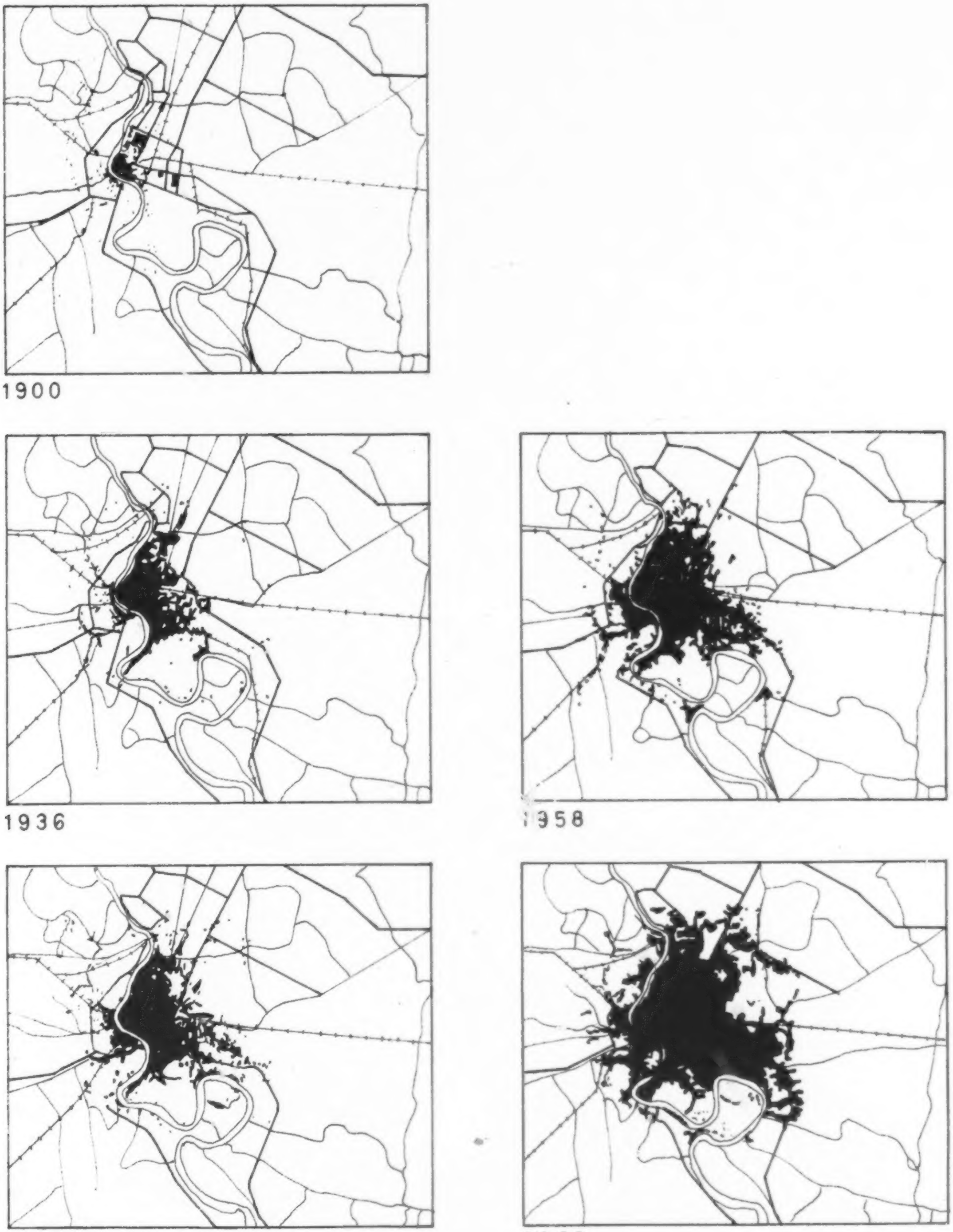
Metropolitan Bangkok is the focus of urbanization in Thailand. Urbanization is a developmental phenomenon in all of the nation, but the problems and potentialities commonly associated with it are concentrated almost entirely in the Metropolis. In the preceding sections of this report we have tried to identify some of the forces leading to the gradual centralization of population and social and economic activity. In the following sections we will examine how these forces coalesce in Metropolitan Bangkok.

Bangkok was originally established in a bend of the Chao Phrya River for purposes of defense. It functioned as the home of the royal family and the seat of religious authority, and was built around a core containing the Royal Palace and a surrounding complex of temples (wats) and monasteries. As governmental functions increased, administrative offices were constructed along the periphery of this core. Eventually, a densely populated commercial district, dominated by Chinese, grew up adjacent to the zone of administrative buildings. Five of the nation's major universities developed nearby.

Canals (klongs) laced the city and its environs, providing drainage, transportation routes, protection against floods, and water supply. Settlements grew in the form of small communities centered on local wats, and as strips of houses tracing the klongs. They gradually merged as urban growth proceeded. A sister city, Thonburi, developed on the west bank of the river and became an integral part of the Metropolis. Land ownership was dominated by the crown, the government, and the wats, but traditional Thai freedoms led to a relatively unregulated use of land. These patterns of land ownership and minimal control are still very influential in modern Bangkok.

After World War II, the population of the Metropolis was about 700,000 people; today, it exceeds three and a half million. In the process of growth and development, much of the historical structure of the city has been obscured. Its area has expanded rapidly across the flat landscape. Today, the growth pattern of the Metropolis covers about 1,200 square kilometers, although the developed portion is only 132 square kilometers. Expansion of the city has followed the lines of the old klongs, many now replaced by streets and highways. Beyond the central city, residential, commercial and industrial sites are interspersed with hugh pockets of unused, inaccessible lands, the values of which have been pushed to exhorbitant levels by speculation. The central city itself has expanded. Modern commercial and residential sections have developed to the north and east of the historical core, and industrial activities have proliferated to the north

BANGKOK—THONBURI URBANIZED AREA FIG. 6



1900

1936

1958

1953

1968

and south. Even in the center, however, large amounts of unused land can be seen, evidence of the lack of land use controls and the absence of penalties for speculative holding. Centralized business districts have yet to emerge, although there is some indication that they will. The Metropolis continues to display a highly mixed pattern of land use. Factories, shops, schools, hotels, wats, restaurants, slums, warehouses, and middle- and upper-income residences exist side by side throughout the city. This situation creates serious environmental conflicts and increases the difficulty and cost of providing basic urban services. It is becoming a cause for concern.

Bangkok has long been famed for its charm and beauty, derived from a gracious blend of peaceful klongs, the vistas and solitude of gold-and-red wats, and the spacious ease of rural Thailand in an urban setting. Gradually, congested and cacophonous streets are covering the klongs, wats are being hidden behind the concrete and neon facades of commerce, and the value of space is being tarnished by a wasteful and unattractive sprawl. Movement of people, goods and information is vulnerable to stoppage by normal circumstance.

Urban planners, trying to show that urban quality and progress can be compatible, have thus far been unable to overcome the Thai aversion to governmental regulation of individual actions. Impending passage of a planning law, and the probable acceptance of a proposed Master Plan for Metropolitan Bangkok soon, thereafter, are significant developments of institutional patterns that have generally not evolved apace with the complexity of urban problems. Growing interest in the application of modern urban technologies, adaptation of urban institutions, and protection of cultural environmental qualities, is reason for optimism about the future of the Metropolis.

The Governance of Bangkok

Metropolitan Bangkok extends into four of Thailand's seventy-one provinces and contains six municipalities.* Each province has a governor who is responsible to the Ministry of Interior. The governor coordinates work of national agency personnel assigned to his province. Provincial officials are therefore subject to the specialized authority of their parent agencies and to the generalized authority of the governor. Governors also possess authority over actions taken by elected officials at district and municipal levels. The Governor and staff of

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* The Bangkok Municipality falls within Province Phra Nakhon and the Thonburi Municipality within Province Thonburi. Province Nonthaburi, to the north and west of Bangkok and Thonburi, contains the municipalities of Bang Bua Thong and Nonthaburi. Province Samut Prakan, to the south of Bangkok and Thonburi, contains the municipalities of Samut Prakan and Phra Pradaeng; Phra Pradaeng is immediately adjacent to, and across the river from Bangkok.

Province Phra Nakhon are frequently referred to as the Bangkok Administration.

District and municipal officials have a range of administrative responsibilities that varies with the size and complexity of their domains. A large share of their budgets is allocated by the national government through the Ministry of Interior on the approval of the provincial governor.

The Bangkok Municipality is by far the largest and most complex in the nation. Its population is approaching three million. The Municipal Government is led by a Lord Mayor, who is its chief executive. He is selected by caucus of the dominant party from among five councillors who comprise the executive agency of the Municipal Government. The Council meets weekly. It is the policy-making group for the municipality, proposing annual budgets, supervising municipal agencies, and determining sources of revenue. Its membership is chosen from among twenty-four Assemblymen popularly elected from six electoral districts every five years. The Assembly elects its own President and Vice-President, approves budgets and policies proposed by the Council, and shares responsibility with the Provincial Governor for selection of the Council. It meets quarterly. Council decisions are subject to the advice and consent of the Governor, the Ministry of Interior, and the National Council of Ministers. At the present time the national and municipal governments are controlled by different political parties.

The City Clerk is the chief administrative officer of the Bangkok Municipality. She is accountable to the Lord Mayor and the Council, and is responsible for the operations of the eight municipal bureaus and their divisions. The main functions of the Municipality are in the fields of public health, primary education, public works, and municipal administration. The activities of all bureaus are related to parallel national agencies.

Municipal activities are financed from three primary sources of revenue. Municipal taxation is one source. It contributes 20-30 per cent of total annual receipts, drawn mainly from a 12 and one half per cent tax on rental income. Land taxes, although assessed according to land value, are insignificant, often uncollected, and have virtually no effect on land use or municipal receipts.

The major source of municipal income is the share of national taxes allocated to the Municipality. This usually exceeds 50 per cent of all Municipality budgetary requirements. A large protion of the share derives from business taxes of one sort or another.

of national grants-in-aid. To acquire them the Municipality, through the Bangkok Administration, submits programs to the government for approval. Most grants-in-~~aid are~~ used for the construction of roads and schools.

The Municipality can borrow money from government agencies and banks, mainly from the Ministry of Finance. The process of obtaining loans is difficult. Applications must be approved by the Governor, the Assembly, the Minister of Interior and the Council of Ministers before they can be forwarded to a potential creditor for judgment.

The Municipality budget for 1968 (see Table XVI) provides one example of the breakdown of annual revenues and expenditures. It is not necessarily similar to those for other years. Variations in size are not systematic, tending to reflect political conditions.

Although the Municipality plays a significant role in the governance of Bangkok, national agencies and state enterprises are also extremely important in the management and development of the urban area. Indeed, fragmentation of function and independence of operation are two related administrative characteristics that resist pressures for coordinated treatment of modern urban problems. Most urban services, for example, are not provided or regulated by the Municipality (with the exception of garbage collection), but are supplied by state enterprises that are loosely tied to different national ministries.

The Metropolitan Electricity Authority (MEA) is responsible for power transmission in Bangkok. Although connected administratively to the Ministry of Interior and accountable to the Ministry of Finance, to which it must remit 25 per cent of its net profits, it supports and plans its own investment and expansion programs. It intends to supply electricity to about 4.4 million people by 1976, and is planning a capital investment of more than two billion baht to reach that objective. The MEA purchases power from another state enterprise, the Electricity Generation Authority of Thailand (EGAT), which sells about 80 per cent of its production to the MEA. The demand for power, concentrated in the Metropolis, is growing by about 30 per cent per year. The planned doubling of capacity over the next five years is expected to cost about two billion baht. A fairly large portion of new capacity will be in the form of thermal plants near Bangkok. EGAT is administratively related to the Ministry of National Development and its National Energy Authority, and also remits 25 per cent of its profits to the Ministry of Finance.

The Telephone Organization of Thailand (TOT)

TABLE XVI

Bangkok Municipality Budget for 1968

REVENUE		% of total
Taxes		74.5%
Business tax	38.8%	
Rent tax	13.3%	
Vehicle tax	5.9%	
Liquor tax	4.6%	
Gambling tax	3.6%	
Signboard tax	3.5%	
Land Development tax	1.5%	
Slaughtering tax	1.4%	
Entertainment tax	1.4%	
Rice Export Tax	0.5%	
Fees and charges for licenses		3.0%
Income from Municipal properties		1.0%
Miscellaneous revenues		2.1%
Grants and loans		19.4%
TOTAL : 457,373,800 Baht		100.0%

EXPENDITURE		
Operating expenditures		93.7%
Public Works Bureau	27.1%	
Office of the City Clerk	25.7%	
Education & Public Welfare Bureau	17.0%	
Construction & Maintenance Bureau	6.9%	
Central Hospital	5.7%	
Public Health Bureau	4.7%	
Vajira Hospital	4.5%	
Finance Bureau	2.1%	
Contractual obligations		2.2%
Debt payments		1.9%
Reserve fund		2.2%
TOTAL : 440,531,500 Baht		100.0%

Budget figures are taken from The Municipality of Bangkok: The Administration and Development of the Capital of Thailand, prepared by the Municipality and published by the Local Affairs Press, Department of Local Administration, Ministry of Interior, 1968 provides service to about 250,000 subscribers, three-fourths of whom live in the Metropolis. It intends to double its number of Metropolitan lines by 1976, at an estimated cost of about one billion baht. Planning is internal. The TOT is responsible to the Ministry of Communications.

The Metropolitan Water Works Authority (NWWA) currently supplies 930,000 cubic meters of water per day. This is sufficient to satisfy the needs of about half the Metropolitan population; the rest draws its supplies directly from streams and klongs, or pumps from the water table. The MWWA plans to double its supplies over the next five years at a cost of 3.4 billion baht. Expansion will be based on a plan prepared by the U.S. consulting firm of Camp, Dresser and McKee. The plan has been approved by the Cabinet and is likely to be financed by the World Bank. The MWWA is under the control of the Ministry of Interior.

Urban transportation involves a maze of public and private responsibilities. Roads and highways are constructed and maintained by the Municipality Bureau of Public Works, the Department of Highways (Ministry of National Development), and the Department of Public and Municipal Works (Ministry of Interior), the division of responsibility determined by criteria of size, function and location. Fixed-route public transportation is provided by many competing private bus companies. An inter-ministerial Public Transportation Committee issues regulations concerning bus routes, fare structure, standards of service and safety, etc., which are then administered by the Department of Land Transport (Ministry of Communications). Regulations concerning other forms of public land transport (e.g., taxis, mini-buses, samlors, etc.) are administered by the Police Department (Ministry of Interior). Water transport regulation is the province of the Harbor Division (Ministry of Communications).

Other agencies also have administrative and proprietary responsibility for various aspects of public transport. The Port Authority, State Railway of Thailand, and Airport Authority, all under the Ministry of Communications and the Ministry of Defense, have large urban land holdings and make significant decisions about urban transport. The Express Transport Organization (Ministry of Communications) and the Public Warehouse Organization (Ministry of Economic Affairs) also play significant roles.

The provisions of urban services in Bangkok is far more complex than our simplified description indicates.[10] We have listed a number of agencies with responsibilities for implementation, yet there are many others with functions that overlap. Overall responsibility for policy formation is usually located in separate bodies--councils--with the authority to prescribe activities of the operating agencies. These councils coordinate a seemingly fragmented administrative apparatus and unify governmental programs in Bangkok. At the same time dependence on them can impede development of administrative responses to problems of rapid urbanization by enforcing the dispersion of scarce technical skills.

The most powerful coordinating council for Bangkok activities is the Council of Ministers where many decisions about the Metropolis are made. Two recent cases indicate the specificity of Cabinet involvement in urban affairs.

1) The Cabinet decided to ban ten-wheeled trucks between 6 AM and 6 PM in the Municipalities of Bangkok and Thonburi in order to alleviate traffic congestion. It authorized the Minister of Interior to enforce the ban through the Police Department, and advised the Minister of Communications to examine possibilities for the construction of warehouses, and perhaps markets, on the outskirts of the two municipalities so that large trucks might deposit their freight without entering the city. The Minister of Communications assigned the Express Transport Organization to conduct the necessary surveys and to coordinate work with the municipalities' city planning

divisions, the Ministry of Interior's Department of Town and Country planning, the Highway Department (Ministry f National Development), the State Railway and the ort Authority.

2) The Bangkok Municipality submitted a general request to borrow 53 million baht, all of which would be completely interest-free, from the Ministry of Finance for purposes of road illumination. This request, which was eventually forwarded to the Ministerial Council through the Bangkok Administration and the Ministry of Interior, was appropriately approved. In turn, the Metropolitan Electricity Authority was commissioned to do the work in accordance with Municipality plans which were to be approved by the Bangkok Administration, before work began.

These examples of Council decisions, when considered altogether, show the importance of another form of coordinating council, the sub-Ministerial level committee. Many such committees such as this sub-Ministerial level committee are appointed by the council and Prime Minister to deal with and handle in their own specialized way, particular problems. These committees are composed of individuals who represent each one of the different ministries, municipalities, and provinces with an interest in the problem at hand. The Public Transportation Committee, already mentioned, is one example. The Committee on Traffic Control and the Metropolitan Water Works Committee are others. Committees gather information, advise the Cabinet on directions for high-level action, formulate policies for implementation by administrative agencies, and coordinate related activities within different ministries. Some examples will indicate the range of their responsibilities.

1) In 1966, the Bangkok Drainage and Sewerage Planning Committee contracted with the firm of Camp, Dresser and McGee to prepare a master plan for waste disposal, flood protection and drainage facilities in Bangkok and Thonburi. The plan was submitted to the Committee in 1968 where it underwent study and modification. It was eventually forwarded to the Cabinet where it was approved in 1970. The Metropolitan Water Works Authority now has responsibility for implementing the plan.

2) In 1960, the consulting firm of Litchfield Whiting Bowne and Associates, in cooperation with the Department of Town and Country Planning, completed a comprehensive master plan for the development of Metropolitan Bangkok. In succeeding years various parts of the plan, particularly those related to road systems, were utilized in development programs. The full plan,

however, could not be adopted in the absence of a planning law. In 1968, anticipating Parliamentary passage of a planning law, the Department of Town and Country Planning began to modify the Litchfield Plan to accommodate changes that had occurred over the preceding decade. It submitted a revised version to the Cabinet at the end of 1970. The Cabinet appointed a committee of ministerial and local representatives, citizens, and experts in various fields to evaluate the plan. The committee, chaired by a ranking member of the Ministry of Interior, has been holding hearings and supporting studies that will presumably lead to requests for additional modifications by Town and Country Planning. Passage of the planning law and committee acceptance of the proposed plan will be interdependent events.

3) Responding to concerns about environmental quality, the Prime Minister established a Committee for Environmental Protection at the beginning of 1971. The Director of the National Research Council was named chairman. A relatively low-status membership suggested the priority assigned to it. The committee has chosen to gather information at present and to support the movement toward passage of a planning law rather than to press for direct action in the environmental field. It intends to assume a more active role after several

years when priorities begin to shift in its favor.

From the administrative-regulatory functions of the Public Transportation Committee to the symbolic role of the Committee for Environmental Protection, the sub-Cabinet level committees perform in a wide variety of ways.

Two agencies within the Office of the Prime Minister help to coordinate urban planning and management. The National Economic Development Board, the national planning agency, and the Bureau of the Budget possess the scope and authority to exact complementation of administratively diversified urban programs. They analyze agency plans and budgets, question duplicate and competitive proposals and, through committee-type consultations, try to reduce the possibilities of wasteful and conflicting programs.

Ministers, particularly those of Interior and Communications, can also integrate Metropolitan programs by coordinating the activities of their own departments. There is substantial evidence that this occurs and that the process relies heavily on the use of inter-departmental committees.

Governmental activity in Bangkok and the Metropolitan area is fragmented in terms of organizational responsibility. It is, however, coordinated at different levels of the bureaucratic hierarchy and by the widespread use of councils and committees for the formulation of public policy. Whether or not the total pattern of coordination and action that emerges is congruent with the needs of a modern metropolis is another question. There is a definite sense that the Metropolis, and even the Bangkok Municipality, are rarely treated as systemic entities, and that efforts to do so in coordinating committees have an ad hoc character about them. Most committees have political as well as administrative functions that may have no relation to urban needs. They are generally unable to give sustained attention to the problems for which they were established. Even when they can, large discontinuities exist among the mandates of the committees and other coordinators.

The notion of the Metropolis has yet to become institutionalized in the forms and coordinative functions of urban planning organizations with powers of enforcement, consistent and comprehensive bodies of urban law and regulations, or local governments of Metropolitan scope. This reflects the persistence of more basic patterns of social life that resist pressures imposed by a modern urban environment. Problems result. There is a rapid evolution of institutional patterns, evidenced by a growing appreciation of the need for planning, public controls on private actions, and Metropolis-wide jurisdictions. In the following sections we will review some of the more significant problems confronting Metropolitan Bangkok, and some trends in the development of institutional capacities to deal with them.

Metropolitan Land Use and Development

Metropolitan land use and development is virtually unconstrained by governmental regulation. The absence of public controls is partly due to Thai traditions that people are entitled to do with their land what they choose. It also reflects the fact that much land in the Metropolis is bound within institutional holdings of the Crown, the Crown Properties Bureau, government agencies and wats, and that most of the remainder is owned by members of the traditional elite and by the public officials who would enact and administer laws and regulations. Opposition to public controls is strong.

At the present time there is no metropolitan or municipal development plan in effect, nor is there any legal basis for implementation of such a plan. The Town and Country Planning Act 2479 (1936), modelled on the British Town and Country Planning Act of 1932, failed because it lacked financial provisions for public appropriation and development of land and because it could not be administered; it was eventually abandoned and has yet to be replaced. The Department of Town and Country Planning, which operates without legal basis, has submitted a modification of the Litchfield Plan to the Ministerial Council for approval. Plan application, however, will require powers of zoning, eminent domain and enforcement, and administrative capacities that do not currently exist.

The Municipality Planning Division has prepared an alternative master plan which must be approved by the Department of Town and Country Planning if it is to be effected; this seems unlikely, given the competitive relationship between the two units. Present municipal powers of control, however, do not extend beyond the limits of its Building Code and the Cemetary and Cremation Act 2481 (1939). The Code, which required approval by the Ministry of Interior under the Building Control Act 2479 (1936), is limited in scope and substance. It invests the Municipal Council with a range of discretionary powers that are delegated to the administrative bureaus. In practice, its vagueness and vulnerability to individual interpretation have led to continual modification and confusion. The only enforceable control that it provides is the requirement of permits for constrution within the Municipality. Permits are granted on the grounds of structural stability, strength, and safety. Locational suitability is not a consideration. The Cemetary and Cremation Act permits the Municipality to regulate the locations, characteristics, and use of cemetaries and crematoria.

The Ministry of Industry has some control over factory location. Under the Factory Act 2503 (1960), it can designate lands for industrial development by obtaining the issuance of a Royal Decree. Non-conforming factories in existence prior to the decree are allowed a two-year period in which to rectify their positions. The Ministry has begun to assert its authority with some aggressiveness. Specifically, it has been establishing industrial zones on the outskirts of the Metropolis and intends to do the same on the eastern coast for pollution-prone industries. The Ministry buys land, supervises the development of services and infrastructure, guides factory location within the zone, and finances its investments from a fund provided by the industries themselves. Although the program is in its very early stages, it is a promising start. It will be encouraged by the fact that industries, acting in their self-interest, prefer to build on lands relatively unaffected by the inflated values of Metropolitan properties.

When an area is destroyed by fire the Ministry of Interior can control the plans for reconstruction. This authority, granted by the Fire Damaged Area Act 2476 (1933), allows the Department of Municipal and Public Works and the Department of Town and Country Planning to prepare plans to which construction and development must conform. Owners whose lands are appropriated for public use are fairly compensated.

Rights of eminent domain suffer more from the inabilities to administer them than from the state of law. The govern-can appropriate land, paying adequate compensation, for any national purposes under the authority of the Land Appropriation Act 2479 (1936). The Highway Department can acquire land needed for highway development (Highway Act 2482, 1939); the Fine Arts Department (Ministry of Education) can make compulsory purchases of sites or objects of art with hsitorical significance (Antiquities Act 2477, 1939); the Department of Irrigation (Ministry of Agriculture) can acquire land needed for flood control and water transportation purposes (Irrigation Act 2485, 1942); and the Ministry of Agriculture can declare any area a national park with the issuence of a Royal Decree (National Park Act 2481, 1961). In practice, however, these powers are extremely difficult to apply and have little effect on patterns of urban development.

The above description suggests, and perhaps understates, the weakness of public controls over land use. Weaknesses are not in the scope of the laws, which is very broad (the very generality of which hinders specific application), but in the ability and will to administer them. In addition, the structure of incentives opposes popular conformity with their implied intentions.

Incentive patterns militate against orderly land use and development in the Metropolis. Land speculation has, during the last decade, become one of the largest and most lucrative businesses in Thailand. The Bank of

Thailand recently showed that about 6.5 billion baht were borrowed from Thai banks for real estate purposes during 1970. The amount has been increasing consistently at a rate of about 50 per cent per year, and accounts for a large share of the striking growth shown by the "Finance" sector in the Central Plain. Banks, government agencies, and government officials are deeply involved in the business, using an imaginative variety of operational patterns to evade legal barriers to their participation.[11]

Much of the dynamic activity involves purchase of farmland in the outreaches of the Metropolis, subdivision into home plots, and sale to aspiring home owners, often on the basis of inflated promises. Minimal access is usually provided, and promises of water supply, electricity and drainage facilities are rarely fulfilled. Subdivision development is subject to no form of public control, nor do home purchasers have any protection against the claims and legal subtlety of the businessmen with whom they deal. A Land Subdivision Bill is now under study by the Ministerial Council and, if approved and eventually passed by Parliament, should rectify some aspects of the situation. Land speculation is a major cause for rising tenancy rates among farmers in the Central Plain, as well as a stimulus of rural migration to the city.

Speculation is also occurring on potential industrial sites in the Central Plain and along the Gulf of Thailand, and is a significant influence on land use within the Metropolis itself. Metropolitan land values have reached astronomic heights. On the average, the cost of land represents about 60 per cent of the cost of housing. Unused land is common even in the most central of commercial areas.

There are no penalties for speculation. Land taxes are insignificant and capital gains taxes non-existent. Limitations on land transfer practices are easily subverted, and there are no zoning regulations. The land business operates in a free market. This has a substantial impact on the patterns of Metropolitan development, encouraging under-utilization of space in the urban center, sprawl at the periphery, and migration into the city.

Traffic and Public Transportation

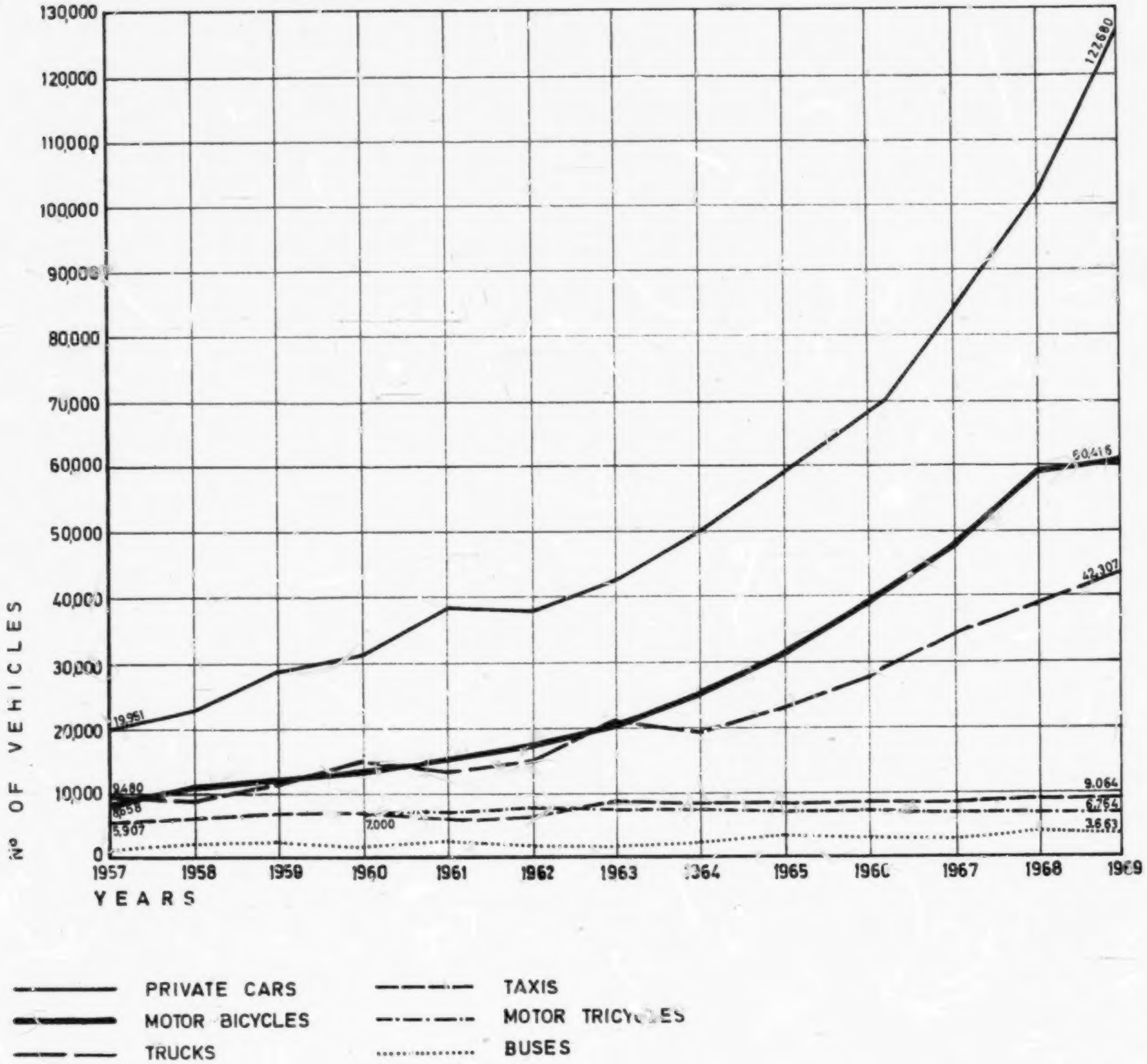
Traffic congestion is the most conspicuous of Metropolitan Bangkok's problems. The number of motor vehicles in the Metropolis has grown at an average annual rate of more than 16 per cent during the last ten years; it now exceeds 300,000. During the decade, less than 20 kilometers of new main road were constructed, and the total length of road increased by just 10 per cent. Only 14 per cent of the urban area is devoted to highways, streets, and lanes.

The implications of these figures become clear during the working day. In the morning and evening rush hours, it is estimated that almost two million people are moving from one location to another. Traffic flows inch along, and serious jams occur even in normal circumstances; accidents and rains make them inevitable. During the day conditions are sufficiently severe to discourage any cross-town travel; traffic frequently freezes into complete immobility. The Royal Automobile Association of Thailand has stated that the Thai economy loses about one billion baht per year in the form of vehicle depreciation and fuel waste in traffic jams. Losses in terms of the total efficiency of the Metropolis must be much greater.

In addition to the sheer number of vehicles relative to road space, other factors are responsible for the growing tangle of Bangkok traffic. Much of the road layout, for example, is inherited from the network of klongs upon which transport depended before the advent of the automobile it is not designed for automotive convenience. Efforts to widen and improve existing roads have encountered excessive land costs, difficulties in land appropriation, and competitive demands for governmental resources. Land is so expensive in Bangkok that its cost for road expansion can be five times the cost of construction. The excessive outlay required for land reduces the effectiveness of

FIG. 7

MOTORIZED VEHICLE REGISTRATIONS 1957-1969 IN BANGKOK & THONBURI



allocations for road development and increases the sensitivity of road conditions to competitive claims for resources. The administrative difficulties of land acquisition can disrupt planning and cause long delays in implementation. Some cases have taken twenty years to resolve; others have forced the choice of less desirable alternatives.

These factors mold a circulation pattern that does not encourage the smooth flow of traffic. Unequal street widths, bottlenecks, awkward intersections, poor links to main arteries, and the absence of bypasses are commonplace throughout the Metropolis. At the same time much road area is underutilized because resources are not available to make it usable.

Several other dimensions of the Bangkok traffic situation deserve mention. One is the prevalence of rather expressive driving habits. The other is the general tendency for children to attend schools distant from their homes. Most of the 700,000 students in the Metropolis must travel to and from school by vehicle, usually during the rush hours. Officials are considering having children study at schools in their home districts in order to reduce traffic loads.

Traffic problems also arise from the inadequacies of public transport. Poor public service encourages the use of private automobiles which, in turn, clog traffic and further reduce the quality of public service. Metropolitan bus service is provided by ninety-three companies operating about 4,200 vehicles on ninety-seven fixed routes. Effective coordination is a gigantic task that has not, thus far, been accomplished successfully. Assigned routes fail to link up or even to cover desired lines of travel. They overlap and duplicate, stimulating competition that is damaging to the companies and to the quality of service. Drivers, paid by the number of trips they complete and passengers they carry, race one another down crowded thoroughfares, stop abruptly in mid-street to gather and discharge passengers, flaunt rules and regulations, and generally create dangerous conditions as they attempt to breach the barrier of impassable traffic with brute force. The competitive structure of routes presses them to do so. Fares are low. Maintenance of equipment is badly neglected in order to save on costs of operation; safety and quality of service suffer as a result, and enforcement of safety measures by public authorities is weak.

A basic problem, however, and one that would probably not even be overcome by perfect organization, is that Metropolitan streets simply cannot absorb the additional busses needed to keep up with increasing transport requirements. Taxis and samlors provide more flexible means of transport and have been increased this year in lieu of bus service expansion, but they add substantially to the congestion and chaos of the streets.

Groups of "experts" have studied Bangkok traffic troubles and made interesting suggestions. The Litchfield Plan proposed the development of three concentric ring roads; its ideas have gradually been absorbed into traffic circulation plans and are in the process of construction. Japanese, British, and American teams have offered other alternatives. The current team of experts is from Germany, and is attached to the Office of Traffic Planning for the Metropolis in the Ministry of Interior. It is working in conjunction with specialists from the Municipality Planning Division, Department of Town and Country Planning, National Economic Development Board, Land Transport Department and other agencies, and has been consulted on various proposals by the Metropolitan Traffic Improvement Committee.

A number of proposals have been offered as solutions for Metropolitan transportation problems. The Municipality has drafted a project for the construction of 33.0 kilometers of a four-lane skyway across the city; cost is estimated at 1.9 billion baht over a three-year period. The Land Transport Department has proposed construction of a 47.0 kilometer Metropolitan subway system at an expected cost of 7.7 billion baht over fifteen years. Electrified railways, monorails, aerial gondolas, as well as a revival of Metropolitan water transport, have also been suggested.

The combination that will emerge in the future is difficult to foresee, but it seems likely that expressway rather than rapid-transit systems will receive first priority.

Aesthetics, Recreation and Space

The Metropolis contains plenty of open space, but relatively little of it is accessible to the public. At present there are less than 1,000 rai (400 acres) of public parks, playgrounds, gardens, etc., in the Metropolitan area, an average of one-third rai per 1,000 persons or about one half square meter per person.[12] The primary recreational spaces are Lumpini Park, the Pramane Ground, and the Dusit Zoo.

Lumpini Park is a pleasant mixture of playing fields and gardens near where the future business center of Bangkok is likely to develop. Commercial exploitation had caused some deterioration, but trees, flowers and grass are beginning to thrive again.

The Pramane Ground is adjacent to the first Royal Palace and the Wat of the Emerald Buddha. It originally served as a ceremonial ground for royal functions such as cremations and plowing ceremonies. It continues to have ceremonial significance, but is now used primarily for other purposes. It is the site of the weekend market, weekday sports events, and election-time mass meetings, as well as of particular royal functions. The uses to which the Pramane Ground is put have rendered it a rather barren and unattractive piece of land.

The Dusit Zoo finances its operations by charging admission. Able to support its own maintenance, it has managed to remain in much better aesthetic condition than the other two parks.

At present there is no program designed to increase outdoor recreational opportunities. Attempts to use vacant government lands for public spaces and gardens have been strongly opposed by the authorities concerned. Much government land has been assigned to private individuals for commercial purposes, yet public and private schools are being built on sites too small to allow space for outdoor recreation. A recent survey by the Ministry of Education of School compounds in the Metropolitan area found that 20 per cent of government schools and 50 per cent of private ones had no compounds at all. Children are forced into the streets for play.

The absence of public parks and playgrounds would not be particularly important if traditional patterns of open space were being preserved. But the tree-edged klongs and expansive wat grounds of old are succumbing to the encroachment of asphalt and concrete. Klongs and wats have been sources of relief, refuge, recreation and fellowship for hundreds of years. Their burial under the clutter of modernity harshens the Bangkok environment and reduces the visual diversity and balance of the city.

The loss is significant for more than aesthetic and recreational reasons. There are 381 wats in the Metropolis, each owning substantial pieces of surrounding land, and hundreds of kilometers of klongs. They have been the traditional nodes and veins of both spatial and social organization, providing integrity and coherence to settlement patterns and social life. Their demise, reflecting the development of new organizational requisites, has not been compensated for by the introduction of modern equivalents such as parks, playgrounds, cultural and social centers. There may be no adequate compensation, and, if this is so, assurance of their continued vitality is an important developmental objective. Spatial, aesthetic, and social dimensions of life are inseparable. Current trends in the Metropolis, however, are destroying opportunities to integrate them at higher levels of quality.

Crime and Violence

Development of the Metropolis has altered the context and character of crime and violence. Retributive responses to personal grievance and flexible uses of the economic system for personal gain, while not accepted by society, are also not unexpected. Unfamiliar patterns of crime have gained importance in recent years, however, and society's responses to them display some bewilderment. They are symptomatic of changes accompanying Metropolitan growth.

During the past several months a number of group attacks on women have shocked the populace and have, to some extent, induced panic about the safety of night movement in the streets. These attacks were not the first in Bangkok, but they seem to have crystallized a popular concern that has been building for several years. That concern focuses on the rising rates of juvenile delinquency in the Metropolis and on the effects that an open city has on its youth. The authorities have moved quickly to constrain a nightlife that has been grossly inflated by the presence of U.S. military personnel in Southeast Asia, and which has attracted youths of low-income families. This is a notable departure from the usual tolerance of individual behavior, reflecting the strength with which juvenile delinquency is perceived as a threat to the society and culture.

There are other probable causes of juvenile delinquency as well. The gradual decline of familial control and the relative anonymity fostered by an urban setting, the striking contrasts between poverty and affluence in the Metropolis and the ambitions they breed, the apparent accessibility of modern luxuries, and the intensified economic competition of the city are also important. They help explain another form of social violence that has become common in Bangkok.

Inter-school battles have cost the lives of a number of young people during the last year. Usually fought over supposed slurs on school reputations, they involve middle-class students for whom school standing makes a substantial difference in career opportunities. School ties are strong and influential, and the stakes attached to status extremely high. Increasing competition for career positions and economic security may be exacerbating school rivalries to the point of violence. In Thailand, education has traditionally been a societal extension of familial control and a selection process for recruitment into the government bureaucracy. Students have been in a position that is at once vulnerable and secure, controlled and protected. In the world of the Metropolis, the security of the education system, and abilities to enforce traditional patterns of behavior within it, are declining. Student violence may be, in part, an implosive reaction to educational-familial constraints that are too limiting in relation to the experiences, threats and maturity offered by an urban environment.

Housing

Housing conditions are usually of critical concern in a growing metropolis. In Bangkok, they have received relatively little attention. Slum dwellers and others who face housing problems have not expressed their interests through political action or organization. Serious investigation of housing conditions is recent, and has yet to provide much firm information. It has concentrated specifically on squatter settlements. Government housing programs have been small. The absence of concern may indicate the absence of a problem; it may also reflect the self-reliance that Thai families display toward matters of their own welfare. Nevertheless, the strains of Metropolitan development are increasing, and encourage consideration of the housing situation and its implications for public policy. Government authorities are beginning to accept the challenge and some ambitious proposals are under discussion.

Spatially, qualities of housing are quite mixed in the Metropolis: low-, middle-, and high-income homes are interspersed throughout the city. Some general patterns of distribution are apparent, however, related to patterns of land development and to the nature of housing needs.

Bangkok develops along its roads, which radiate from the center of the city, usually along the alignments of old klongs. They are few in number, given the size of the Metropolis, limited by the cost of land, the difficulties of public acquisition, and the "blocked" character of many land ownerships; they are separated by large wedges of land. After a main road is completed, builders soon pack shophouses along its sides.* Lanes from the road open adjoining sites for the construction of individual homes, compounds, and high-rise apartments. Low-income families move on to the unused residual areas left by this process, usually near the location of employment opportunities; they may or may not pay rent for the land they occupy, and are often hidden from sight and mind. As land prices increase, large commercial buildings begin to interrupt the lines of shophouses, and rents rise. Because there are no penalities for holding unused land, under-utilized space pervades the Metropolis from center to periphery, and house locations are more dispersed than they would otherwise be.

Most families rent their homes. Rents, or monthly charges, for homes of equivalent quality depend on accessibility: they decrease as distances from the center and from the main roads increase. In the center, commercial housing rents do not fall below 700-1,000 baht per month. Such amounts exclude low-income families from the market, unless the already small units are divided among several families who purchase occupancy in environments commonly regarded as slums.* Middle-income housing extends from the center outward to the suburbs. Low-income rental housing begins toward the periphery of the city. Low-income housing toward the urban center is in the form of squatter settlements; most residents pay no rent and occupy homes that they have constructed for themselves on unused public land.

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* A shophouse is a multi-storey structure, generally sharing common walls with identical adjacent buildings, in which the bottom storey is used for a family business, the upper ones for family living space.

The market for upper-income housing seems reasonably healthy: supply and demand are about equal at the going rates. Middle-income families, however, face significant housing pressures: rates toward the urban center for "acceptable" conditions are generally beyond their means, and supplies toward the periphery are too limited. The profitability of the subdivision business, and the high risks and transportation costs that buyers are willing to accept in purchasing subdivision homes, are indicators of severe housing pressures on middle-income families in the city. Many subdivisions have inadequate drainage, access and space; unless the government enforces builders' commitments, or provides basic services itself, they will probably become slums in the future.

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* "Slum" is a subjective judgment of living conditions. In Bangkok, we find it generally applied to residential areas in which: a) drainage is sufficiently poor that land surfaces are covered by water much of the year, causing sanitation and health problems; b) access is minimal, provided by tracks and lanes that can only be traversed on foot most of the year; c) houses have no space between and around them, outdoor family activities occurring on common ground (or water). By this definition, all squatter settlements and a number of low-income and middle-income housing areas in the Metropolis are slums.

"Low-income families," by the Department of Public Welfare's definition, are families earning less than 3,000 baht per month, and "middle-income families" those that earn 3,000-5,500 baht per month. The last figure is a low ceiling for "middle-income" under present conditions, unless supplemented by family wealth; the limit that we imply when talking about middle-income housing is closer to 7,500 baht per month.

Squatter settlements are the best evidence of the low-income housing shortage in the Metropolis. By conservative estimate, they contain about 50,000 households. The proportion of families in the Metropolitan population that is "low-income," however, is much larger than this 10 per cent, but little information is available about the housing conditions of those not resident in squatter settlements.

An interesting aberration in the general picture of housing scarcity is the high vacancy rate of shophouses. Between 30,000 to 50,000 relatively new shophouses stand empty at the present time. One reason is the high initial payment required to obtain occupancy; few can afford it. Another is that the style is unsuited to the tastes of potential occupants; Thais strongly prefer detached, personally-owned dwellings that open out to a surrounding space. Third, construction of shophouses has been a speculative response to inflated prices of land and institutional limitations on land sale. Builders lease valuable frontage land, for long periods (twenty years) at low rates, with the provision that buildings will revert to the landowners at the end of the lease. They can easily pay land costs from interest earned on the initial payments of occupants, and landowners can gain an assured income without losing the control and security of their property. Wats and government agencies, constrained from selling their properties, have used the long-term lease as a means for supplementing their incomes. Shophouse construction is a financial adaptation to the speculative nature and rigidities of the land market. It can be very profitable, even when over-expansion occurs, but apparently does not address the requirements of those who need housing.

Estimates of Metropolitan housing needs vary with the criteria of need employed. The Litchfield team, ten years ago, thought that about 700,000 people needed to be rehoused. The Municipal Planning Division has estimated a present housing shortage of 92,000 units for about 552,000 people.[13] A UNDP housing advisor places the figure at 50,000 households, the number currently in squatter settlements,[14] and the Department of Town and Country Planning states that only 100,000 persons require improved housing. It is clear that there is little agreement on the criteria and magnitude of need, nor is there information about the numbers of middle- and low-income families occupying slums outside of squatter areas. The result is a debate over appropriate government actions.

Public policies and programs have made insignificant contributions to housing needs; in fact, the absence of public controls on land use, speculation, and home construction has encouraged the commercial construction of future slums. Between 1963 and 1969, the Department of Public Welfare (Ministry of Interior) built 962 detached units for sale to middle-income families, and 3,054 rental units in five-storey "project" structures for low-income families.[15] These numbers are small by any standard of need. Meanwhile, land prices have risen so high as to render impossible any commercial construction of low-income housing.

The government, within the Housing Subcommittee of the National Economic Development Board, is now considering a Department of Public Welfare proposal for the construction of 10,000 low-income rental units over the next several years, and 55,000 units during the next decade. Proposed structures are to be of the five-storey "project" style already used at Din Daeng and Hway Kwang. Unit rentals will be 200 baht per month, with any costs above that covered by the government. The 10,000-unit stage is expected to cost about 500 million baht, a tremendous increase over previous expenditures which averaged 20 million baht per year.

The proposal is an encouraging one for it represents a definite shift of governmental priorities toward housing issues. It has been criticized, however, as inappropriate and inefficient. Critics argue that high-rise "project" styles are contrary to housing preferences, and that they discourage the resourcefulness and initiative displayed by slum dwellers in the improvement of their environments. They note that the number of migrants in the next decade will be triple the number of people that would be housed through the proposed program. They claim that alternative approaches, ranging from the provision of developed sites and basic services to that of unfinished superstructures, would have lower per-unit costs, broader acceptance, and greater ability to elicit and absorb individual resources and tastes.* Finally, they emphasize that the need to resort to "project" styles is imposed by the excessive costs of land resulting from failure in the land market, and that effective solutions to housing problems must involve comprehensive public regulation of land allocation and use.

Criticisms and alternatives have been proposed by a Themmasat University team that recently completed an excellent survey of the Klong Toey squatter settlement.[16] Klong Toey is the largest Metropolitan squatter settlement, containing about 25,000 people. It is located on Port

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* Rataya Chantian of the National Building Research and Development Center, Applied Scientific Research Corporation of Thailand, has prepared the following evaluation of alternatives for the Housing Subcommittee (see Table XVII).

Authority land adjacent to the port of Bangkok. It has attracted attention because of its size, its reputation as a center of crime and other forms of social deviance, and its impending replacement by new port facilities. Port expansion has posed questions as to where and how displaced residents will be relocated, and encouraged a study of the settlement's characteristics and preferences. Results of the study have refuted many accepted notions about settlement life and have influenced ideas about housing needs.

Surveyors found the Klong Toey settlement to be a stable, cohesive, and highly interdependent community, containing within it traditional bonds of family and village. Half of the household heads lived there for more than ten years, three-fourths for more than five. Eighty per cent migrated from up-country, most of them from three provinces within a 100 kilometer radius of Bangkok. Although most came to be near employment opportunities, 20 per cent came primarily to be near relatives and neighbors who had previously moved to the settlement. Today, 53 per cent of the residents have relatives in the settlement outside of their own households.

The settlement is a self-reliant and economically effective part of the Metropolis. Residents consider themselves much better off than they would be in their up-country villages, seek out and perform essential functions

TABLE XVII

Alternative Housing Types

Type of Housing Provision	Land cost per unit at edge of city ฿500 per wa	Land cost per unit in city at ฿1,000 per wa	Land development cost at edge of city	Land development cost in the city	Building Construction cost per dwelling unit	Total cost on ฿500 land[a]	Total cost on ฿1,000 land
Site and services only - on filled land[b]	20,750	41,500	10,000	10,000	- - -	30,750	51,500
Site and services with 42-square meter platform, toilet	20,750	41,500	10,000	10,000	10,000	40,750	61,500
Site and services and unfinished superstructure, 2-storey row house design, 42 square meters each storey[c]	16,665	33,330	13,750	12,500	20,000	50,415	65,830
Site and services and unfinished superstructure in 2-storey semi-detached house design, 42 square meters each storey[d]	31,250	62,500	25,781	23,440	20,000	77,031	105,940
Apartment unit in 5-storey flat, 35-square meter total floor space, Din Daeng design	9,500	19,000	7,857	7,143	45,000	62,357	71,143

a. Forty percent of an undeveloped site is reserved for public purposes which include: roads, paths, and parking - 20%; and market, playgrounds, public open space, school, clinic, management office, etc. - 20%.

b. "Services" includes roads and walkways, land fill, drainage, water and electric lines.

c. The row house superstructure would include masonry side walls, a floor on the second level, a roof and a partitioned toilet. End walls, windows, stairs, ground-level floor and partitions would be installed by the tenant-owner as his resources permitted.

d. The superstructure for the semi-detached house would be similar to that described for the row house, except that there would be three outside walls.

in the urban economy, and are able to remain in the city only by living resourcefully on public land. Specialization of functions in the community, as well as within extended families, frees a maximum number of people for gainful employment. Diversified sources of family income and female employment are characteristic. Eighty per cent of the families have built or purchased their own homes at a median cost of 2,666 baht; rents average 100 baht per month. These figures contrast with the 30,000-40,000 baht that a minimal piece of nearby unimproved private land would cost. Most families would be unable to afford standard housing rates: the median monthly income is 1,232 baht, 61 per cent have incomes less than 1,500 baht, and 25 per cent earn less than 760 baht per month. Nevertheless, 69 per cent are free of all debt and only 15 per cent owe to people beyond family and friendship ties.

Surveyors found only 16 per cent of home interiors below "acceptable" standards of neatness and cleanliness. The external environment, however, is a crowded, inaccessible and polluted mire, and water and electricity are obtained primarily through community arrangements. Government agencies have no authority to provide drainage, access, and services to illegal occupants of public land; although officials generally respect peoples' rights to live where they can, most feel threatened by the Klong Toey situation and remain aloof from it. Residents, in turn, recognize their vulnerability, and tend to avoid contact with government and claims on the authorities.

Residents and officials share a common concern for the effects of Klong Toey life on its children. Survival in the slum depends, to a great extent, on abilities to exploit opportunities for profit that are not attractive to other segments of the Metropolitan population. Children participate in the system and assume economic and home responsibilities at an early age, often at the expense of their education. They are absorbed in an economic milieu that includes socially marginal activities, and learn roles that are both at the fringe of the general society and in conflict with traditional patterns of behavior and familial control. Effects on children are the only aspects of settlement life that a majority of Klong Toey parents consider unacceptable: 50 per cent of household heads in the survey described living conditions for children as "bad" or "very bad"; 58 per cent described behavior of the settlement's young people, and 63 per cent the adequacy of education facilities, in the same terms. Government interest derives primarily from a concern about juvenile delinquency.

Klong Toey residents must be resettled. When asked what alternative housing arrangements they preferred, 78 per cent indicated a desire for single detached homes; only 1.0 per cent wished to move to a Din Daeng-style project of the kind the government is now considering. This fact, an appreciation of the strength and resiliency of squatter settlements like Klong Toey, and an awareness of the initiative and skill that squatters muster for satisfaction of their needs, are the bases for opposition to the government's proposed housing program. Critics believe that extremely valuable motivations and social resources will be lost in the structured environment of the high-rise "project."

The critics make one erroneous assumption: that squatters are the only residents of the Metropolis who face serious housing problems. In fact, the housing issue is much broader. Many middle- and low-income families live in legal slums and lack the resources to escape from them, but they have yet to be counted or surveyed. Their conditions and preferences deserve investigation.

Housing problems are intimately related to problems of inadequate roads, congested traffic, public transport, dispersed development, the loss of open space, and the high cost of government services. They are all exacerbated by the unregulated exchange and use of Metropolitan land, and can only be solved by the government's active acceptance of responsibility for guiding urban development in a coherent direction.

Air and Water Quality

Bangkok is a remarkably clean place. Traditional pride and government concern keep streets swept, storefronts maintained, and most garbage collected. However, affluence, growth and modern technologies are beginning to generate more waste than the environment and current institutional arrangements can handle. Pollution of air and water has become a recognized problem.*

The flat terrain of the Metropolitan area welcomes the atmospheric cleansing actions of wind and rain. Inversions are rare, and night air movement disperses the smoggy residue of daily activity. During the day, however, vehicle exhaust fumes are pervasive. Street air can be stifling, a grey haze trapped between the fronts of streetside buildings. Increasing numbers of vehicles offer no prospect of respite. Measurements by a governmental research committee support subjective reactions: concentrations of carbon monoxide and other pollutants often exceed "safe" levels on busy streets. Police have the authority to fine particularly noxious vehicles, but have been unable to impose consistent controls. In any case, the problem is less one of deviant individuals than of excessive vehicle operation in limited space. High import taxes, by reducing the rate of vehicle increase, have probably slowed the deterioration of air quality. Other more direct programs are needed to attack the sources of traffic and air congestion.

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* Garbage collection and disposal are related problems. Increasing amounts are being left within the city, destined to wash into klongs and streams or create health hazards. The Municipality and the Ministry of Interior are responsible for keeping the city clean, and seem to be making aggressive efforts to keep apace with the rapid growth of solid residuals. Most garbage is dumped. Attempts to use it for compost and electricity production have yet to prove economic, but are indications of innovative concern.

Water is more than a resource in Bangkok: it is a basic medium of urban life. Forming a continuous layer near and on the surface, it links all activities in the Metropolis, passing the effects of one to the operations of others. Water for home and industry is drawn from groundwater, and wastes discharged to it. Roads, pipelines, cables and buildings, bedded in the water table, are adversely affected by immersion and contaminants. Klongs and streams provide food and facilities for bathing, transportation, drainage, drinking, recreation, sewage and industrial waste disposal. The entire urban system is bound by water relations, its structure and institutions molded by historical responses to them.

Water relations are intensifying as the Metropolis develops. The symptoms of stress are easy to find. Tap water is not potable, containing polluted groundwater that permeates a leaky distribution system. Klongs and river waters, once valued sources of food, recreation, and beauty, are now murky sewers devoid of life. In 1967, scientists from the Asian Institute of Technology found that heavy waste loads had reduced average levels of dissolved oxygen to 4.2-5.7 mg/liter in the Chao Phrya, close to the accepted survival limit of 4 mg/liter; levels approaching .0 mg/liter were recorded for particular times and places. Since 1967, waste loads have increased, as have their competitive demands for scarce oxygen. A once-thriving shell fishery at the mouth of the river has been all but destroyed. Other adverse consequences of pollution can be expected as industrialization of the Metropolis and its adjoining coastal strip progresses. Current techniques and institutions of water use cannot accommodate the pressures on water resources that are accompanying urban development.

The lack of economically feasible water management technologies is one cause of stress. Sewage disposal, for example, is a decentralized function in Bangkok, the responsibility of individual households and plants. To centralize it by constructing urban-wide public systems would involve a prohibitive expenditure. To improve and regulate the current pattern would require instrumentation and waste technologies that are either not available or are too expensive for those who must pay the cost.

Without suitable and economic methods, control of water pollution is a difficult proposition.

Present institutional patterns are another source of stress. Laws, regulations, administrative, judicial and community processes, norms and values evolved under less competitive conditions, and their development now lags behind the emergence of conflicts characteristic of a metropolis. We have commented on some problems in the public provision of water services and have alluded to private adaptations stimulated by them. Regulatory and mediative capacities also cover a relatively narrow range of urban water conflicts.

The State owns all water resources in Thailand and is empowered to regulate all aspects of their utilization. Private land ownership only entails rights of water use, not ownership, but rights are strongly respected and not constrained unless uses are proven to damage the recognized interests of other parties.* Responsibilities for water quality control are vested in the Ministries of Interior, Public Health, National Development and Industry. The Ministry of Interior, through municipal and local authorities, can prohibit pollutive uses of drinking water supplied, and can zone areas for public bathing, clothes washing, animal use, etc.* It also enforces building standards** and, through provincial governors, can designate waters for protection against uses that will reduce their quality for irrigation.*** The Ministry of Public Health sets discharge restrictions among requirements for building and factory operating permits.**** The National Energy Authority, Ministry of National Development, has the power to regulate all aspects of energy production including, presumably, pollutive ones.***** The Ministry of Industry regulates factory operations, prohibiting industrial discharges into canals and waterways of untreated wastes that will endanger public health, water quality and agricultural production;****** it can also designate lands for industrial development and set standards for factory buildings.* Finally, the Board of Investments provides promotional incentives to new industries, e.g., "location" and the "encouragement of new technologies." Interpretations of both might conceivably include water quality considerations.

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* Adjudication of water use conflicts is based on general principles expressed in the Civil and Commercial Code of Thailand and specific rules contained within individual laws. It operates through the court system of the Ministry of Justice or by administrative mechanisms, depending on the nature of the dispute.

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* Conservation of Water Supply Canals Act 2456 (1913), Public Health Act 2484 (1941), and Sanitation Act 2495 (1936).

** Building Control Act 2479 (1936).

*** People's Irrigation Act 2482 (1939).

**** Public Health Act 2484 (1941). Enforcement is by the Ministry's Division of Sanitary Engineering.

***** National Energy Authority Act 2496 (1953).

******First provided in the Factories Act 2485 (1942)

The intent of most water laws and regulations is to resolve traditional problems of drainage, irrigation, public water supply and health; apart from those pertaining to factories, they are not oriented toward problems of urban development. Nevertheless, the laws contain few limits to administrative discretion and are amenable to broad interpretations that would apply specifically to metropolitan conditions. Regulatory agencies, however, have not exploited legal flexibilities and have tended to act on a relatively few urban water issues. This may reflect a realistic appraisal of enforcement possibilities, respect for political boundaries between agencies, the prevalence of individualistic norms and values, and the fact that agencies have other potentially competitive objectives. It may also reflect the perception that water conflicts are not of critical importance in the city; as the perception itself is an expression of priorities, it has the effect of a policy decision.

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* First provided in the Factories Act 2503 (1960); the provisions of the first two Factories Acts have been absorbed and strengthened within the Factories Act 2512 (1969). Specific release standards have been formulated under the most recent Act for a wide range of industrial wastes; compliance with these standards is a condition for receipt of an operating license. Government industries, however, are exempt from them.

The distinciton between "rural" and "urban" is one of intensity. What the current body of laws, regulations, and administrative procedures lacks are mechanisms for resolving the kinds of urban conflicts between high-priority uses that do not generally occur with the same intensity in non-metropolitan situations. Recent acceptance by the Ministerial Council of a Metropolitan Water Plan displays a growing appreciation for the need to assess priorities in terms of their competitive relationships. The pace of perceptual change is probably being stimulated by an increasing public awareness, indicated by media coverage and organizational interest, of pollution problems. Private groups, such as the Society for Conservation of National Treasures and Environment and the several university environmental clubs, have begun to educate the public on pollution issues, and are being supported by mutual interests in various newspapers. They and the government can draw upon information generated by pollution research programs at the Asian Institute of Technology and the Applied Scientific Research Corporation of Thailand. During the past year, the Cabinet has formed an environmental control committee that will eventually recommend comprehensive environmental policies, laws and regulations. The committee has commenced its efforts with a search for information and support for the proposed Metropolitan

Planning Law and Master Plan. These seem astute preliminary steps, for it is clear that acceptance of urban planning as a legitimate authority for metropolitan coordination must necessarily precede less basic requirements for environmental management.

Other Issues

Three important issues have not been considered in the above sections. Education, unemployment, and public finance are crucial concerns in the Metropolis, and deserve much more attention than we have given them. Summary comments might suggest their dimensions and their relationships to the previous discussion.

Education

Education is a dominant aspect of the Metropolitan society, the primary source of upward mobility and future security. Demands for educational opportunities are among the strongest imposed on the government and constitute a fundamental political force. Population growth and rising expectations are straining the government's abilities to respond to these demands. Pressures concentrate in the Metropolis, becoming manifest as frictions of space and society.

We mentioned that migrants are attracted to Bangkok for the educational opportunities available there. The same kind of locational influence does not exist in the Metropolis itself. As children are free to study in any school for which they qualify, regardless of where they live, and as the constraints in markets for school seats and houses are severe and unrelated, choices of school and home locations are quite separate. As noted above, most students travel outside their home districts for studies, losing hours in movement each day and burdening a jammed transport system. Proposals now under discussion would require school attendance within home districts and would reduce qualitative differences among schools. Such policies should benefit lower- and middle-income families who suffer most from the present situation, relieve traffic congestion and increase individuals' time for employment, study and leisure.

We also suggested earlier that competition in the urban economy is increasing strains among students that occasionally erupt in acts of group violence. An extension of this is that educationally qualified people already exceed the number of jobs in which they can use their abilities. While overt expressions of frustration have not yet emerged, they may well do so in the future: trends are toward greater disparity between academic skills and job requirements.

Unemployment

The estimated rate of unemployment in the Metropolis is about 8.0 per cent double that for the rest of Thailand. This is misleading. Unemployment "surfaces" in the Metropolis, but is probably less there than in non-Metropolitan areas. The urban unemployed, however, tend to lack the traditional protections available to those up-country, and may pose a more significant social problem.

Bangkok unemployment is not visible, although that may change as the population increases. It would be interesting to know how unemployment is distributed among different residential areas, which skill classifications and industrial activities are most vulnerable, how workers and families respond to it, and the extent to which it impinges on recent migrants and is reduced by outward migration. Data for these kinds of exploration may be available in the Department of Labor (Ministry of Interior) which operates an employment service and publishes periodic market surveys.

Public Finance

Inflation, weak coordination, and the sprawling character of Metropolitan development are rocketing the costs of public services. Public budgets for utilities, transport, housing and education are declining in purchasing power. Urban infrastructure development programs, accomplished with a minimum of inter-agency coordination, often bear unnecessary costs of duplication and non-conformity. The expansive spread of urban growth increases the miles of pipe, road and cable required to serve a given number of people. These problems are all inter-related. A basic land development policy, enforced with an appropriate system of taxation and regulation, would bring more order to growth, contain the costs of land, increase opportunities for coordination, and draw additional revenue for the financing of public developments. The impending Metropolitan Planning Law and Master Plan could provide the basis for such a policy.

Trends

It is easier to cite Bangkok's problems than to define the elusive sources of its charm and effectiveness. In reviewing the preceding sections, we are impressed with the attention to problems, the lack of attention to forces of continuity, stability and progress. This reflects a Western tendency to compartmentalize stress and to view progress as the isolation of a "problem," a cathartic clash of interests, eventually compromise, and a "solution" ritually clothed as a break with the past.

Progress in Bangkok is more subtle and less visible. It results from a continuous balancing of diverse interests, each preserving a distinct identity, rather than from compromise among them. Acute sensitivities to imbalances among the many strands of the stupa-shaped social hierarchy are valued more than abilities to objectivize "problems" and "solutions." They respond to changes in the perceptions and needs of individual strands, gradually moving stresses to levels of the hierarchy at which they can be relieved through collective consideration. In these terms, progress is the upward movement of new issues and the shift of collective interest toward them. Changes evolve with movement of the issue; they do not require formal introduction, but are gradually absorbed as awareness of needs for them broadens. Laws are less culminating statements of social purpose than expressions of coalitional agreement at the highest level.

The committee structure of bureaucratic-political action typifies this pattern. We have observed differences in the locations and strengths of committees concerned with specific urban issues. Budgetary allocation, education, and social integration are concerns of the Ministerial Council. The proposed town planning legislation and Metropolitan Plan are being considered by a prestigious and strong sub-Council ministerial committee. Traffic committees are composed of departmental administrators and specialists. Discussions on housing take place within a committee of the national planning agency. Pollution is currently the domain of scientists and technicians who lack implementational authority. These assignments indicate priorities as well as the relative pressures of the issues themselves.

The proposed planning law and Metropolitan Plan are examples of this process of change. They required at least a decade to attain the priority they now enjoy in the government. Beginnings of the Plan stem from technicians on the Litchfield team and in the Department of Town and Country Planning. Its recommendations, while modified, have been gradually absorbed by other technical agencies; this has been particularly true in the fields of Metropolitan transportation planning and industrial location. Acceptance of planning has grown, and committees established within agencies and ministries to coordinate urban activities. Change has been continuous, although not overt. Impending formalization of planning activities is unlikely to alter this pattern. However, it does symbolize the evolution of broad agreement about the interdependency of physical and social aspects of urban life.

In this section we will summarize contents of the law and plan, and indicate sources of probable future strain.

The Town and Country Planning Act 251? (197?)

The proposed Town and Country Planning Act would give the Department of Town and Country Planning legal authority to prepare urban development plans and guide local governments in preparing their own plans. It would also establish a committee responsible for consideration and approval and of all urban plans. The committee would be chaired by the Minister of Interior and composed of ministry representatives, educators, local leaders, and experts. Its approval of a plan would enable the Minister of Interior to issue regulations required for implementation. An approved plan would remain in force for five years, renewable for another five years by the Minister. Additions to a plan, either proposed or approved by the Department of Town and Country Planning, would require committee consent. If they involved questions of land acquisition and ownership rights, a Royal Decree might also be required. The Decree would automatically freeze land prices.

The Act makes no provision for financing land acquisition, a crucial failing in the Planning Law of 1936. It does not provide for national grants to localities and therefore contains no incentives for local action. Inadequate resources will hinder local development of staff needed for planning and implementational activities. It will also require administrative resolution of public-private disputes over land allocation, burdening the Ministry of Interior with quasi-judicial functions. Finally, the Act provides no means by which urban planning and development planning, the responsibilities of different organizations, can be coordinated. This seems a probable source of future difficulty.

Revised Metropolitan Development Plan of the Department of Town and Country Planning

The proposed Metropolitan Plan is a revision of the Litchfield Plan. It is based on several assumptions:

1) The projected manageable population for the Metropolis in 1990 is 6.5 million people. Population can be kept within this limit by decentralizing employment opportunities through creation of industrial estates beyond the Metropolitan periphery and through strengthening regional centers at Chiengmai-Lampang, Songkhla-Haadyai, and Khon Kaen.
2) There will be 677,179 vehicles and almost two million primary and secondary school students in the Metropolis in 1990.
3) Zoning of urban activities is necessary and can be enforced. The Plan therefore proposes systems

for zoning, industrial classification, school districting, transportation, and the coordination of Metropolitan services.

The Plan proposes and maps six zones of uniform use to replace the current pattern of mixed development.*

Commercial zones would include a strong and specialized central business district with a satellite system of subcenters. They would comprise about 6.0 per cent of a 732 square kilometer Metropolitan area.

Industrial zones would be created along the river at the southern edge of the city. The location of specific industries would be determined by criteria of compatibility with other uses. Four industrial classes are recommended. Factories that entail excessive levels of pollution, noise, potential danger, or traffic congestion would be placed in industrial estates outside the Metropolis. Those that are less annoying in terms of smoke, noise, and odor, but entail water pollution and traffic congestion, would be located at reasonable distances from residential areas, i.e., in industrial estates and zones. Light industries that cause little annoyance would be permitted to locate in industrial zones and near residential areas. Those causing no annoyance would be allowed on any site that gains government approval.

Residential zones would encircle the city center.

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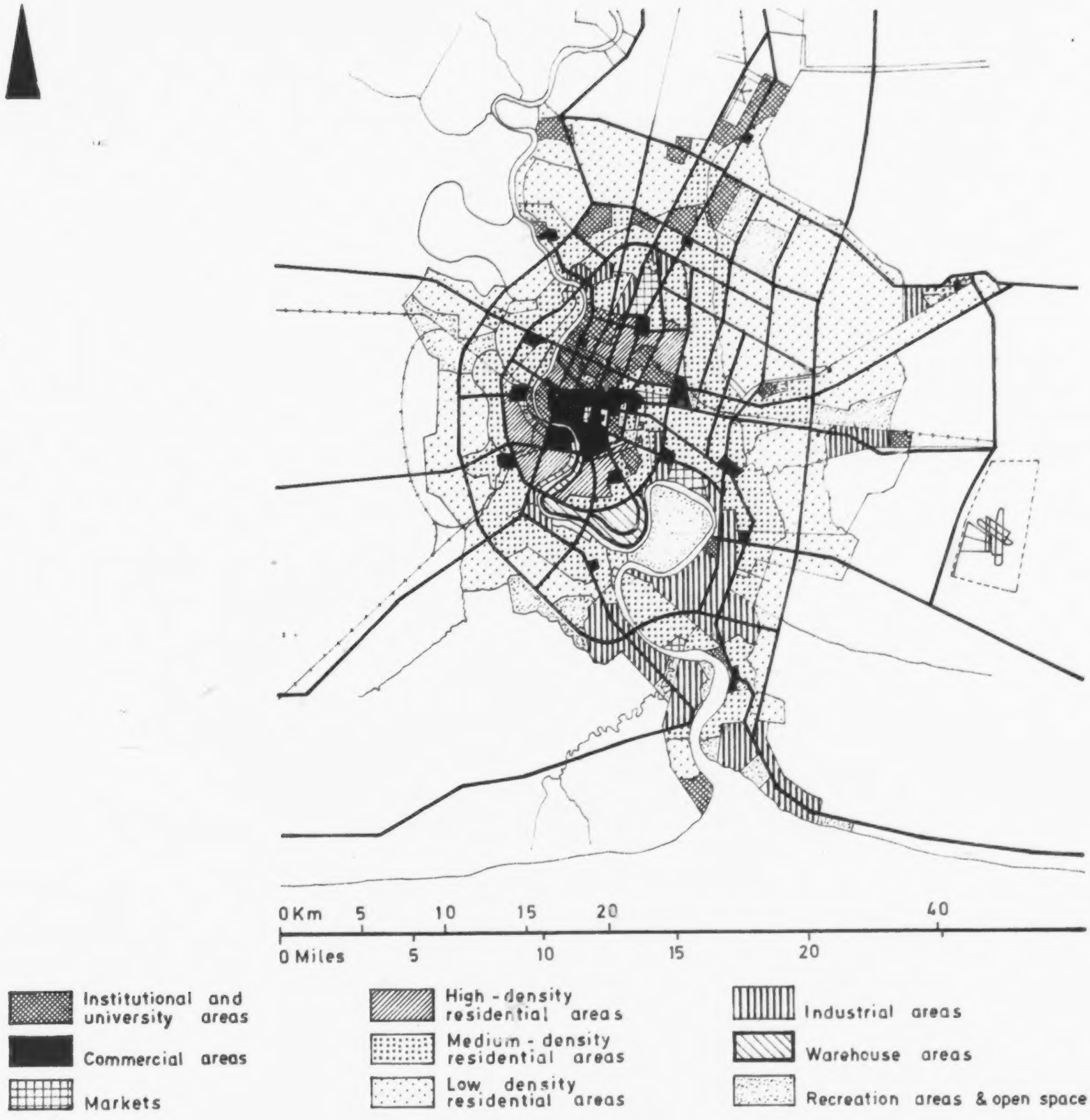
* See appended map and plan summary.

FIG. 8

GREATER BANGKOK DEVELOPMENT PLAN 1990


0 Km 5 10 15 20 40
0 Miles 5 10 15 20
Institutional and university areas
Commercial areas
Markets
High - density residential areas
Medium - density residential areas
Low density residential areas
Industrial areas
Warehouse areas
Recreation areas & open space

Almost six million people would be housed in areas now considered suburban.

Recreational space would be increased thirty-nine times its present extent. A 9,000 rai tract would be reclaimed for park space near klong Toey, and three times that area would be developed in the suburbs.

School space would be rapidly expanded in the suburbs and students required to attend schools within walking distance of their homes. Both proposals are designed to reduce Metropolitan transport difficulties.

In conjunction with its zoning pattern, the Plan proposes a road system much like that of the Litchfield Plan--three ring roads, supporting radial roads, and an improved gridiron pattern. Aside from recommendations to improve Metropolitan rail service and to raise intra-urban tracks above street crossings, the Plan does not propose new modes of public transport.

The Plan says little about public housing requirements. It does recommend studies of housing conditions, formulation of criteria for such studies, and the preparation of housing standards and a long-range housing policy.

It provides mechanisms within the Department of Town and Country Planning for coordination of independent plans by public utilities and services, and recommends that the six Metropolitan municipal governments eventually be consolidated into a Metropolitan Authority. Consolidation would begin with the formation of a coordinating committee, composed of municipal and national officials, and the establishment of administrative units for Metropolitan-wide interest within municipal governments. Creation of an Authority would be the final step.

If the Plan is evaluated as a comprehensive guide for urban development, it has some notable weaknesses. Its projection of population seems too low and its optimism about the ability to deflect urban migration too great. It depends on a process of public land acquisition that is inadequate for accomplishment of its objectives. Its zoning system separates employment and residential opportunities, increasing travel requirements and tending to ignore the advantages that mixed-use patterns afford the economically-complex average urban family; it does not propose suitable compensatory modes of public transit. The most general problem of the Plan, however, is that its prescriptions cannot be realized under the existing structure of economic and social incentives controlling urban development. Enforcement would be extremely difficult, placing a huge burden on already strained administrative capabilities.

It is inappropriate to evaluate the plan as a comprehensive guide, however. Changes do not occur by comprehensive solutions in Bangkok, but by iterative responses.

The plan, as a view of the future and a valuable compendium of information, has already elicited responses from other strands of the society and has encouraged them to modify their actions and interests. Discussion about it and competitive proposals of the Bangkok Municipality and Camp, Dresser and McGee should further clarify, and organize approaches to, Metropolitan issues. Some important topics come into focus precisely because the Plan neglects them: poor relationships between urban and economic development planning activities, the complementarities and conflicts between Metropolitan and regional development, and the strong incompatibility between current incentives affecting urban development and preferences for a more productive and satisfying Metropolitan environment. That these issues are being raised before the Metropolis has suffered irreversible deterioration is cause for optimism.

SYNTHESIS

Urbanization: Spatial Development and National Welfare

More than one quarter of all Thai residents in the Metropolis during the 1960 census had been born up-country. (In comparison, 11 per cent of the nation as a whole was living in provinces other than those of their birth.) The Metropolitan population has grown by an average of 6.2 per cent over the last decade; more than half the increase has been from migration. The impacts of migration are neither random nor equal: they bear selectively on particular environmental and institutional factors, and are probably as diverse as the regions and villages from which migrants come. If Klong Toey is an accurate indication, migrants to the Metropolis are attracted to settlements occupied by people with similar backgrounds; they also attempt to locate near employment opportunities. The Klong Toey survey demonstrated that residents were relatively homogeneous in terms of original locality, occupational skills and education levels, religion and dialect. Presumably, other settlement areas possess their own unique characteristics. Viewed in this way, the Metropolis becomes a modified projection of the hinterland on a relatively fixed set of environmental and historical attributes; its conditions are linked to the hinterland sources of its people.

We expect that migrant groups respond differently to the Metropolis. Sidney Goldstein provides some evidence of this in his review of 1960 census data on differential fertility rates among religious groups.[17] He found that average fertility rates declined by 25 per cent on the continuum from rural-agricultural settlement to the Metropolis, but that Muslim fertility was higher in Bangkok (25 per cent above the Muslim country average) than in any other situation. Although Muslim fertility was significantly below that for Buddhists and Confucianists in all other settlement categories, it was the highest among religious groups in the Metropolis. Goldstein was unable to conclude whether fertility effects of the Metropolis were responses to the urban environment or results of selective migration. Either possibility implies the existence of differential migrant responses to the Metropolis. Other patterns of differential response are likely to affect the character and needs of locations in which particular migrant groups concentrate.

Time patterns of migration differ. Some people come on a seasonal basis, some for a tentative number of years, others with the expectation of permanency. Regularity in the origins and motivations of differently-timed flows, and in their spatial and functional distributions within the city, seems probable. Little attention has been given to this question, although it is a significant one for urban programs.

Migrant impacts on urban institutional patterns are selective. For example, many young people come to the Metropolis for their education, thereby straining an already-overburdened school system and directly connecting the relative lack of educational opportunity in the provinces to the state of urban education. As the migrants tend to remain in the city after their academic careers, they enrich the Metropolitan labor force, increasing its productivity, its competitiveness, and the strains of unemployment, and reduce the availability of talent in the provinces. If migrants come to the city for employment, they follow unique gradients of opportunity between their home localities and the Metropolis, bring with them characteristic locally-acquired skills and values, and work in particular activities. The concentration of up-country youths in parts of the Metropolitan service sector is one example; it is creating stresses to which the urban society has begun to react. Employment of most Klong Toey household heads as laborers in construction and transportation is another example; in this case, particular streams of migrants, living near their primary source of jobs at the port, are restricting development of essential port facilities, straining environmental and institutional capacities, and at the same time are making highly productive contributions to the urban economy. Their impact on the Metropolis is directly related to conditions in the hinterland.

Migrants cause strains when they impinge on environmental and institutional patterns that are least able to absorb them. It is notable that housing and unemployment attract comparatively little concern in Bangkok, and that even traffic congestion draws little criticism relative to the magnitude of the situation. This probably reflects resiliency in residential and employment patterns and relatively high tolerances for frictions of space. In comparison, there is substantial concern about crime, juvenile delinquency, education, and the losses of traditional behavior and valued, usually historical, qualities of the environment. Presumably, this indicates more rigid, less adaptable, elements of Thai culture.

Migrants are not the only sources of pressures on, and vitality in, the Metropolis. Bangkok is Thailand's access to the world. Inflows of new technologies, consumer goods, enterprises, and foreigners have had major, and selective, effects on it over the last decade. They have influenced the kind, quantity, and location of employment opportunities, patterns of residential development, and styles of life. The American military commitment in Southeast Asia, for example, stimulated growth in particular kinds of public and private enterprises. It has bred the development of a long strip of "rest and recreation" businesses on Petchburi Road, now edged by housing for service sector employees; the strip has opened a previously low-density area for standard business and residential development as well. Another example is the rapid growth of manufacturing. Most factories have located on the river and on major roads beyond the press of Center traffic; worker settlements have sprung up around them. Finally, foreign residents have tended to concentrate in, and determine the character of, relatively new upper-income neighborhoods east of the Center. Their requirements have stimulated activities in residential commerce and services, and have encouraged workers in such activities to live nearby. The cumulative effects of local and foreign initiatives and resources have been to generate a borad expansion of job opportunities in the manufacturing, transport, construction, commerce and service sectors, to substantially raise family income levels and expectations, to alter the city's map, and to Westernize its tone and pace.

Energies of the vigorous Metropolis have exploded into the surrounding countryside. Middle-income families, now able to purchase car and dwelling, have been willing to accept the travel costs of movement to the suburbs. They are to a great extent responsible for the rapid semi-urban growth recorded in the first section of this paper. Suburbs have risen around existing market centers or have been constructed as subdivisions on farmland near main roads. In general, they consist of market centers, surrounding middle-income homes for people employed in the city, residual farms, and housing for the families serving suburban needs. Land speculation is rapidly eliminating the remaining agricultural activities.

Industries are also dispersing to the urban periphery, attracted by the greater availability of land, water, and easy access. Their movement extends beyond the range of suburban growth. New residential areas are beginning to develop around nodes of industrialization, inhabited by people who are employed locally rather than in the city. This kind of development is occurring to the north, south, and west of the city, and promises to create a future urban-industrial complex stretching along the Gulf coast from the mouth of the Chao Phrya to the new southeastern port of Sattahip. Dispersion of industry with its attendant employment opportunities is the primary instrument by which urban planners hope to manage population growth within the Metropolis; in fact, it is extending the

Metropolis itself.

Another interesting aspect of urban dispersion is the planned relocation of most Bangkok universities beyond the Metropolis. The Asian Institute of Technology and the English Language Center will soon move to a new site at Rangsit, about 40 kilometers north of the city; more than 100 factories are already located in this area, and construction is progressing on a "new town" there as well. Kasetsart, the agricultural university, will be moving its campus to Kampaeng Saen, almost 100 kilometers to the northwest. Mahidol, the medical university, is expected to shift to Nakhon Pathom, 75.0 kilometers westward, and Chulalongkorn University is planning to establish a second campus in Chon Buri, about 60.0 kilometers southeast on the seacoast. Thammasat and Silpakorn Universities will leave the city, but plans for their departure remain uncertain. These movements will physically remove academic communities out of the city, but without reducing the strength of their organic connections to it.

The shift of Kasetsart University 100 kilometers into the heart of the Central Plain suggests that the difference between Metropolitan growth, and Metropolitan stimulation of regional and provincial centers, is one of degree. In both cases, people, techniques, resources, skills, and their requirements for support, flow toward environmental and functional vacancies in the hinterland, toward opportunities to increase productivity through greater specialization and diversity of effort and space. Flows are selective responses to Metropolitan pressures and local circumstances, and have selective responses to Metropolitan pressures and local circumstances, and have selective effects. Distance simply increases autonomy of the local patterns with which they must merge.

Some examples of Metropolitan flows to regional centers can be drawn from the first half of this report. The Northeast has attracted large governmental investments for infrastructural and military development, primarily by growing regional discontent. It has also experienced a net inflow of migrants over the last decade, the most rapid rate of urban growth among the regions, disproportionate growth in larger urban centers, and striking differences in income levels between the small urban and huge rural populations. Although evidence is weak, we expect immigrants have been attracted by opportunities that government programs have created, that such opportunities have been concentrated in larger centers, that many immigrants possess technical skills, and that they account for much of the growth in the regional cities of Korat, Khon Kaen, Ubon and Udorn. If these expectations are accurate, we also wonder about the extent to which government impact on large centers induced expansion of urban functions, stimulated migration and investment from smaller towns and rural areas, and demonstrated productive possibilities that were then exploited at lower levels of the regional settlement hierarchy. Metropolitan flows have been dominant factors in urbanization of the Northeast. How appropriate the spatial-functional patterns they have fostered are, in terms of the region's needs for development, is an issue that deserves investigation.

The North has not received government investments comparable to those in the Northeast, nor are there signs of significant immigration. However, there have been substantial flows of Metropolitan capital into the region, as well as earnings from sales in the Metropolitan market, to support local initiatives. Such flows appear to facilitate urbanization trends rather than determine them. The North has displayed relatively consistent economic growth based on the gradual intensification, specialization, and diversification of agriculture-related activities. This pattern of development has its own momentum for the evolution of an urban hierarchy as long as demand for products is good and capital is available. The rapid growth of Chiengmai and Lampang is an expression of the increased intensity and productivity of regional farming and the specialization of primary production activities. The relative declines in smaller towns and rural populations, and the net outward flow of migrants, are parts of the same selective process. Although incentives from the Metropolis have been sources of motivation, tangible flows have filled voids and eased constraints without actually establishing the pattern of evolution.

The South has received little from the Metropolis, either in tangible or intangible form. The lack of government investment may be due to the region's relatively high average levels of welfare. But the absence of all flows supports the impression that the region is locked in a circle of economic and spatial stagnation that presents few attractive opportunities. The economy, based on three commodities in chronically declining markets, is depressed. Industrialization and the growth of larger cities are slow. New alternatives are not being generated and the rate of outward migration is relatively high.

Constraints on Southern development have apparently not elicited positive responses from inside or outside the region. The development of settlement hierarchies, as with other aspects of institutional development, is a response to constraints. The shapes and characteristics that hierarchies assume depend on the kinds of constraints that are the most critical in their environments, the resources and institutions that are most affected by population growth, changing expectations, new techniques and alternatives. In the North, land is the scarcest resource, and the maintenance of a satisfactory standard of living requires the improved availability of agricultural inputs, market opportunities, credit and intensive management techniques. The region's settlement hierarchy seems to be evolving toward a functional organization that will fulfill these needs, and toward a shape and scale that will do so more efficiently. In the Northeast, the crucial scarcity is water. Compensation for it, given the relative relatively slow progress in rain fed agricultural technologies, requires additional land for individual farm families, and increases pressures for migration and frustrations with institutional rigidities that constrain access to land. While these conditions lack centralizing impulses, they have bred political energies that elicit and respond to large-scale government subsidization of urban nodes and transportation links. The South, however, has thus far displayed neither the ability to generate productive advances in economy and space as the North has, nor the Northeastern ability to exact government attention to its problems: its most severe constraints appear to be institutional. This should change as the pressures of population on resources and institutional patterns continue to increase. Meanwhile, the region is provides little attraction for flows from the Metropolis and is unable to break its own stagnation.

Regional generalizations cannot replace more careful analyses of the myriad streams that merge in the national settlement hierarchy. Nevertheless, the above sketches do illustrate differences in flows from the Metropolis to regional centers, suggest their roles in urban and econeconomic development, describe the selectivity of regional attractions, and indicate the importance of environmental and institutional constraints in the evolution of settlement patterns.

The sketches also display the continuity and individuality of relationships between the Metropolis, regional and local centers, and rural localities. Settlement hierarchies, fed and constrained by local capacities, assisted and led by Metropolitan resources and examples, are rooted in Thai rural society. Their vitality reflects as well as stimulates rural dynamics; there is complete interdependence. Distinctions between urbanization and rural development in Thailand are products of viewpoint rather than definitions of separable processes.

Presumably, local constraints and flows operate as selectively on people as they do on the shapes and colors of settlement hierarchies. They influence the skills and values of those confronting them and determine the differentials of opportunity to which continuing residents and potential migrants respond. Migration is a selective process of urbanization, drawing people with particular attitudes from particular localities and shifting them to particular settlements. We expect that it attracts those with aspirations for improved standards of living and with abilities to perceive the limits of local opportunities, perceptions molded and sharpened by the testing of those limits. It is not the hopeless and unskilled who migrate, therefore, but those who seek a better life and have been trained by challenging the environmental and institutional constraints of their home localities. Migrants to the Bangkok slums bring with them initiative and characteristic talents, energies that are concentrated, for good and ill, by the hinterland projection of migrant settlements on the Metropolis.

Urbanization: Policy and Research

Urbanization flows are distinguishable by their sources, composition, motivations, termini and effects. Throughout this report we have mentioned policies and programs that selectively affect these flows, and the web of relationships in which they are bound. The influences of different policies and programs deserve much more exploration. While the magnitude of urbanization may be beyond control, its directions seem amenable to management. If relationships between government actions, local conditions, and specific flows are understood, then actions can be adjusted to increase effectiveness of the urbanization process and reduce costs of avoidable strain.

Some examples may provoke discussion of how government policies and programs affect urbanization:

a) Differentials in educational opportunity currently motivate flows of youth from the hinterland to the Metropolis. What are the magnitudes of student flow from different localities, and how well do they correspond to indices of difference in educational opportunity? To what extent can differentials be altered? How might migration rates respond to shifts in allocation of funds between Metropolitan and provincial school systems, between levels of education? How might changes affect the distribution of educated people, national and local welfare, and points of social and environmental strain? Increasing differentials may worsen the Metropolitan employment situation for skilled people and retard hinterland development; it might also have positive effects on national productivity and the quality of education. Would reducing them have reverse effects or no effect, would it merely postpone individuals' decisions to migrate until later in life, or would it alter the composition of migrant streams?

b) The absence of regulations on land use and exchange has encouraged widespread speculation in the Central Plain and around regional centers. How does speculation affect the utilization of land throughout the country? To what extent has it increased rates at which all of the said farmers in different localities have shifted to other forms of employment and settlement? What are the apparent effects of such shifts? To what extent has speculation increased costs of living and of public services in the Metropolis, stimulated private investment and job creation, increased Metropolitan income levels? What are its total effects on net income gradients confronting people in different localities, occupational and socio-economic groups? How might they change with imposition of significant land and/or capital gains taxes? Controls on speculation, by reducing incentives for dispersion and inefficient land use, might alleviate Metropolitan traffic problems. Would they also increase urban pollution and social stress?

c) Various taxes can be examined for their differential effects on welfare, population and resource movements. The rice premium, for example, constrains prices paid to the farmer and by the urban consumer, thereby contributing to incentives for migration to urban centers and non-farm employment. How sensitive are migration rates to the premium? How do its effects differ among regions, localities and socio-economic groups? How does it affect non-Metropolitan welfare and development possibilities?

Import duties comprise another category of taxes that probably have selective effects on urbanization patterns. Do protective tariffs on fertilizer imports, for example, significantly reduce agricultural productivity and incomes among particular kinds of farmers and localities? If so, how strongly do they influence off-farm movements? Does the protected local industry compensate for agricultural losses by creating present or future employment in urban centers? What are the total effects of protective fertilizer policies on the welfare of particular localities, regions and socio-economic groups, the directions, rates and composition of migration, patterns of urban settlement, and the level of government revenues?

The duty on imported automobiles is another example. We have suggested that it curtails the number of cars purchased and may, therefore, ease traffic problems in the Metropolis. If it has greater impact on potential purchasers outside the Metropolis than inside, however, it may increase differentials of productivity, income and perceived welfare between the Metropolis and other areas. Is the incidence of the duty the same throughout the country, or does it vary from place to place and among different socio-economic groups? If it varies, what are the effects on distributions of economic activity, gradients of perceived welfare opportunities, and movements of people and resources? To what extent does containment and alleviation of traffic problems in the Metropolis increase its attractiveness for migrants?

d) Family planning programs have spatial implications. They are selective in terms of the locations and groups of people they reach. Population pressures are more severe in some environments than in others; social responsiveness to program styles also differs from place to place. What are the spatial and social patterns of acceptance in Thailand? How are they affected by the style and size of the family planning program? Is program design conducive to acceptance in areas and groups most strained by population pressures? If not, to what extent can it be altered? Does it have an urban bias? Natural population growth rates are declining more rapidly in the Metropolis than in other parts of Thailand. We suspect that this differential, and the effects it has on per capita income differences, increases rates of urban migration. If this is so, what would be the relative social costs of increasing the effectiveness of rural family planning programs, absorbing the additional increment of migrants within the Metropolis, or eliminating increments to welfare differentials between hinterland and Metropolis that are created by potentially controllable portions of population growth?

e) Governmental administrative offices are allocated spatially. Do public services tend to be better near administrative centers? If so, do the locations of administrative centers affect the distribution of welfare, patterns of migration, and composition of migratory flows? To what extent are the distributions of administrative centers adjustable? How might they be used to influence spatial distributions of people and activity and qualities of settlement?

f) The location of new industrial activity affects patterns of employment opportunity and environmental strain. To what extent have promotional incentives and the establishment of industrial estates influenced these patterns? How sensitive are non-governmental incentive structures likely to be to feasible public policies of this kind?

g) Government priorities for support of technological innovation are selective in the provision of new opportunities to localities, regions and socio-economic groups. What are the distributions of benefits that seem likely to result from current priorities? How well do they coincide with the distributions of technological scarcity, economic and social need? How might they influence patterns of spatial development? To what extent can they be altered?

h) Transportation and communications developments in the last decade have had major effects on

> patterns of spatial distribution. They have improved accessibility, exchange and incomes, broadened and intensified perceptions of the world, have probably constrained the growth of income differentials between Metropolis, towns and rural areas, although not necessarily among social groups, while increasing opportunities to respond to such differentials. What have been the selective responses of localities and groups to the advantages of transportation and to the possibilities for increased movement? What have been the selective impacts of new flows on rural, semi-urban, urban and Metropolitan environments? What might answers to these questions suggest about criteria for future transportation planning?

While spatial considerations are peripheral to the objectives of most policy areas cited above, they are explicit concerns of those involved in national, regional, urban and rural development planning.

Throughout this report we offered a number of questions that bear claim on planners' attentions; they will not be repeated here. However, we will emphasize the need for much more information about the dynamics of spatial and functional relationships, their expression in a settlement hierarchy evolving from the hill farm to the center of Bangkok, and their manifestations of vitality, opportunity and points of social and environmental strain. Planning in Thailand has generally not integrated the economic, social and spatial dimensions of development, in part because planners have lacked information about ongoing processes of change and have had to rely on formalistic economic and physical planning models. More information should help to free it from the enforced insensitivities of conventional method, encourage strategies of allocation that emerge from the substance of Thai problems, and allow the planner to operate more as a manager than an architect.

Research is an important source of information. While many kinds relate to urbanization in one way or another, some are particularly valuable because they generate integrative techniques and concepts of interdependence as well as useful information. The following is a brief list of organizations now doing research on urbanization in Thailand.

The Population Institute of Chulalongkorn University is analyzing a large cross-sectional survey of families in Thailand. Although originally intended as a study of factors affecting family size, the survey is also a source of information about population movements. It will become increasingly valuable in this respect as the subsequent periodic repetitions planned for it are completed. The Population Division of the National Statistics Office and the Manpower Planning Division of the National Economic Development Board are performing related research on patterns of migration, and the Department of Labor has been amassing data on worker movements for a number of years. Together, these efforts should soon begin to provide reliable information on the character of migratory flows.

The Population Institute has been gradually shifting its emphasis from family planning toward the broader issues of urbanization and population policy. It is moving toward the urban interests of Chulalongkorn staff in the Faculties of Engineering, Architecture and Political Science. As one result of this growing conjunction of interests, proposals are emerging for the establishment of an Urban Studies Institute within the University. Such an institute would be the first of its kind in Thailand. That it be located in the one major university likely to remain in the Metropolitan Center seems appropriate.

Metropolitan issues are drawing the organized attention of other universities as well. The Thammasat University Faculty of Social Administration is following its Klong Toey survey with similar studies of other Metropolitan settlement areas. The Mahidol University Faculty of Public Health is beginning investigations into health aspects of the Metropolitan environment. Both organizations rely heavily on student participation in research. Both promise to develop useful approaches to questions of urban management.

Another academic center of Metropolitan research is the Asian Institute of Technology. Environmental scientists there have been studying problems of waste management and water relations in the Metropolis. They are contributing technical information about the urban environment, and are generating innovative ideas and techniques for application in environmental management. The Applied Scientific Research Corporation of Thailand is a partner in several of these research programs, as well as a source of other technical initiatives. It is foremost in studies of alternative approaches to Metropolitan housing requirements.

Research in the National Education Council and Ministry of Education is providing the basis for a Metropolitan school districting plan that should help to relieve traffic problems. Studies of traffic and urban transit alternatives are proceeding in the Chulalongkorn Faculty of Engineering, the Department of Municipal and Public Works, the Municipality, the Department of Land Transport, and the National Economic Development Board. All of these organizations are collaborating with one another.

Many government agencies have research sections to study future Metropolitan needs. Unfortunately, there is little coordination and exchange among them. The Department of Town and Country Planning and the Planning Division of the Municipality are important in these circumstances. The research upon which their planning activities are based is comprehensive and integrates information generated by other organizations.

A few organizations have undertaken studies of sub-Metropolitan urban centers. Most notable are the Chulalongkorn University Social Science Research Institute and the Department of Town and Country Planning. CUSSRI teams have been studying functional relationships within and around the cities of Ayudhya and Chon Buri. Their objectives are to provide information and planning models for developing these centers and their surrounding areas. CUSSRI teams are interdisciplinary and generally display some balance between rural and urban interests: they contain participants from both Chulalongkorn and Kasetsart Universities. Although findings have yet to be released, concepts and methods of the CUSSRI approach seem to be potentially very productive.

The Department of Town and Country Planning has prepared development plans for a number of urban centers in Thailand. In the process, it has collected substantial quantities of valuable information. Its physical approach contrasts with CUSSRI's functional one; marriage of the two would be desirable for planning purposes.

The National Institute of Development Administration is also becoming involved in urban research and is considering the establishment of a regional planning program. Its Faculty of Public Administration intends to study urbanization in the Chiengmai area, probably in cooperation with Chiengmai University and an NEDB planning unit, and its Research Center is beginning to focus on urban topics. Hopefully, the Chiengmai study will be linked to ongoing development research and planning activities in the North. A UNDP team has been collecting regional information for some time. The Chiengmai University Multiple Cropping Project is sponsoring intensive economic studies of the region's lowland agriculture. Economists at Thammasat University are preparing a model for an economic evaluation of the region's resources. The Hill Tribes Research Station, Department of Land Development, and Kasetsart University's School of Forestry are all studying hinterland conditions related to the development of Chiengmai, and a number of specialized agencies are tackling technical problems of resource use. Finally, the Accelerated Rural Development program, under the Office of the Prime Minister, has gathered information needed to plan and implement its activities in the North, information that is also useful for understanding the evolution of Northern settlement patterns and migration.

The Northeast Economic Development group and the Mekong Secretariat have collected large amounts of data relevant to urbanization in the Northeast. The former is pursuing a "growth pole" strategy of regional development, and probably has sought the very information that would be most applicable within a framework of urbanization policies. The latter seems to be ignoring settlement implications of its objectives, but its studies should throw light on environmental and institutional characteristics of different localities in the region.

Agricultural research organizations have generated large amounts of information about agricultural marketing and transportation systems, farm management, land tenure, and rural welfare throughout the country. Until recently, they had not coordinated their efforts with urban-oriented groups. Participation of Kasetsart University's Department of Agricultural Economics in the CUSSRI studies of Ayudhya and Chon Buri is an encouraging sign. The Bureau of Agricultural Economics (Ministry of Agriculture) and the Department of Land Development (Ministry of National Development) are also executing research that is important for an understanding of urbanization.

Information on urbanization in Thailand is growing. The more there is, the better we should be able to understand the complex processes involved. Hopefully this will lead to an increasingly productive allocation of human activity, a reduction of the strains caused by urbanization, and the ability to exploit the opportunities that it provides.

POSTSCRIPT

Shortly after completion of this report, the Revolutionary Party assumed power in Thailand and transferred all governmental authority to a National Executive Council of its members. During its several months of control, the NEC has displayed a dominant interest in Metropolitan affairs. Crime, nightlife, sanitation and pollution have been subjects of strong decrees aggressively implemented. The governments of Bangkok and Thonburi have been merged into a Greater Bangkok Municipality. Working groups of experts have been organized to formulate progressive proposals and expedite their movement through the pipelines of bureaucracy. Urban planning, management, and finance are high among their priorities.

Many normal academic and governmental activities are in abeyance as key people spend long hours on working group tasks. The feeling among participants seems a mixture of hope, excitement and anxiety: hope that their ideas will be brought to fruition, excitement from their intense participation in the process of re-assessing national priorities, anxiety because the directions of the NEC are still obscure and its willingness to confront fundamental issues uncertain.

In any case, it appears that the governing coalition of interests in Thailand has shifted toward a more active concern for Metropolitan problems. This is cause for optimism. It is also reason for discouragement among those who see it as perpetuation of the government's historic absorption in Bangkok and relative aloofness from people and problems in the hinterland.

NOTES

1. See, for example,

   Vickery, Michael, "Thai Regional Elites and the Reforms of King Chulalongkorn." Journal of Asian Studies, Vol. XXIX No. 4, August 1970,pp 863-81.

   Keyes, Charles F., "Buddhism and National Integration in Thailand," Journal of Asian Studies, Vol. XXX No. 3, May 1971, pp 551-67.

2. Percentages are computed from preliminary data of the National Income Account Division, National Economic Development Board.

3. Percentages are computed from preliminary data of the National Account Division, National Economic Development Board.

4. Figures are from research by the National Education Council, results of which were released in March 1971.

5. Much information in this section is drawn from Sidney Goldstein's analyses: "Urban Growth in Thailand, 1947-1967, "Chulalongkorn University Journal of Social Sciences, April 1969, pp 100-144;
   "Regional Patterns of Urbanization," Chulalongkorn University Journal of Social Sciences, July 1969, pp 136-154;
   "Urbanization in Thailand, 1947-1967," Demography, May 1971, pp 205-223. Other information results from our analyses of population data in the National Statistics Office and Division of Town and Country Planning, Ministry of Interior, Thailand.

6. Between 1947 and 1970, the number of designated municipalities increased from 116 to 120.

7. Figures were computed by the Department of Town and Country Planning from registration records in the Department of Local Administration.

8. Growth rates are calculated at constant 1962 prices.

9. Household Expenditure Survey, National Statistics Office, 1964.

10. For detailed descriptions of ministerial and departmental functions, consult Thailand Government of Organization Manual Series, Institute of Public Administration, Thammasat Universitv Press, 1965.

11. See "Investing in Land," Investor, August 1971, pp 677-681 for an interesting and careful review.

12. Department of Town and Country Planning.

13. Chanchareonsook, Arporn, *Housing in Bangkok-Thonburi*, Municipality Planning Division (mimeo), May 1970.

14. French, D. G. *Suggested Approach to Control and Reduction of Squatter Settlements*, National Economic Development Board (mimeo), February 1971.

15. Department of Public Welfare.

16. *Klong Toey: A Social Work Survey of a Squatter Slum*, Department of Social Work, Faculty of Social Administration, Thammasat University, August 1971.

17. Goldstein Sidney, "Religious Fertility Differentials in Thailand, 1960," in *Population Studies*, pp. 325-337, November 1970.

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